APPENDIX 4

TRAFFIC IMPACT STUDY

Final Traffic Impact Study

SR 94 Improvement Project

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1.0 INTRODUCTION

This study, prepared by Kimley-Horn and Associates, evaluates the traffic related impacts associated with the SR 94 Improvement referenced in this document as the Proposed Project, and recommends mitigation measures for any significant traffic impact resulting from the Proposed Project. The Proposed Project is the construction of access road improvements on State Route 94 (SR-94) associated to the Jamul Indian Village (JIV) Gaming Project and five off-site mitigation measures per the certified *Jamul Indian Village Final Tribal EE*, dated January 2013.

Project Description

The Jamul Indian Village (JIV) is proposing to construct signalized driveway access to their separately and independently approved future gaming facility and also to improve five intersection locations along State Route 94 (SR-94), as a result of traffic generate from the operation of their future gaming facility. The California Department of Transportation (Caltrans) is required to review encroachments on State right of way and anticipates the JIV to apply for one or more encroachment permits to perform the proposed construction. In conjunction with the proposed improvements and impact to State right of way, the requirements of the California Environmental Quality Act (CEQA) must be met before the issuance of a future encroachment permit. With Caltrans' oversight, the JIV is preparing the necessary environmental and engineering technical studies and will prepare an Environmental Impact Report (EIR) on Caltrans' behalf under CEQA and Caltrans guidelines to address the potential impacts from the proposed access alternatives and five intersection improvement locations. Caltrans will be the lead agency on the EIR and will independently review the EIR to ensure that the EIR meets CEQA requirements. The JIV is located approximately 1-mile south of Jamul, California (Postmiles: 20.4-21.4).

The JIV is proposing three alternatives to access the future gaming facility adjacent to their property along SR-94. In addition, improvements to five intersections along SR-94 west of the future gaming facility will be a project feature of each of the three proposed access road alternatives. These access alternatives are proposed at the following locations: (1) the existing "Reservation Road", which connects the JIV property to SR-94, (2) an adjacent 4-acre parcel (north of the JIV property), which is currently owned by the JIV "known as Daisy Drive", or (3) via a new roadway constructed from Melody Road south to the JIV property. Under the Daisy Drive access alternative, there are three potential build options which are described in more detail below. The third access alternative at Melody Road would connect off of the County of San Diego's property. This access alternative would still require improvements to SR-94 resulting in the need for an encroachment permit from Caltrans. In addition to the driveway access alternatives and the five intersection improvements a No Build alternative will be under consideration. Below is a breakdown of the proposed improvement alternatives.

Access Alternative 1: Reservation Road Access,
Access Alternative 2: Four-Acre Access, (Daisy Drive)
- Option 1: Full Disturbed Area
- Option 2: Reduced Disturbed Area
- Option 3: Minimum Disturbed Area

Access Alternative 3: Melody Road Access, and
Alternative 4: No Build Alternative.

The various options under Alternative 2 differ in the amount of additional right of way (ROW) needed to be incorporated into the project improvements. Each of the access alternatives are described in detail below in Section 1.2 *Alternatives*.

Figure 1-1 depicts the location of the project site in a regional context. **Figure 1-2** illustrates the location of the roadway improvements. **Appendix A** includes design plans for each of the proposed improvements along SR 94.

Alternatives

The JIV is proposing three build alternatives adjacent to their property along SR-94 to access the future gaming facility. In addition to the access road improvements, the JIV also proposes to improve five intersections along SR-94 to address anticipated traffic generated from their future gaming facility. The five intersection improvements will be a project feature of all the access road alternatives. The intersections to be improved include:

1. SR94/Jamacha Boulevard Intersection: Restripe the northbound left-turn lane to a northbound through shared left-turn lane and restripe the northbound through shared left-turn lane to a northbound right-turn lane (including required traffic signal modifications). The proposed improvements would affect Jamacha Boulevard, which is within the County.

2. SR94/Jamacha Road Intersection: Add a second eastbound right-turn lane and retaining wall (including required traffic signal modifications). The right-turn lane would extend beyond the existing Caltrans ROW. Modify northbound striping on Jamacha Road to have the left through-lane lead directly into the left-turn lanes.

3. SR94/Steele Canyon Road Intersection: Add a second eastbound and westbound through lane. Install traffic signal equipment, such as detection system, conduits and pullboxes. Two of the approaches are within the County ROW.

4. SR94/Lyons Valley Road Intersection: Install a traffic signal. Traffic signal equipment, such as detection system, conduits and pullboxes would have to be installed within the County's ROW.

5. SR94/Maxfield Road Intersection: Restripe the northbound approaches along SR94 to include an acceleration lane. This improvement will also include the widening of SR94 north of Maxfield Road necessary to accommodate additional acceleration lane.

Alternative 1: Reservation Road Access

Alternative 1 proposes improvements to SR-94 from approximately 1,200 feet north of Melody Road to approximately 1,800 feet south of Reservation Road, for a total length of approximately 0.9 miles. The alignment of SR-94 is realigned to provide flatter horizontal and vertical curvature, as well as pavement cross slope and superelevation meeting current design standards. Lanes and shoulders are widened where necessary to also meet current standards.

New traffic signals would be installed for Alternative 1 at the intersection of SR-94/Melody Road, and also at the intersection of SR-94/Reservation Road, which is the proposed JIV access location for Alternative 1. Exclusive left-turn lanes would be provided along SR-94 for the north to west move onto Melody Road, and the south to east move onto Peaceful Valley Ranch Road. Likewise, an exclusive left-turn lane would be provided for the north to west move onto Reservation Road. In addition, a second

southbound through lane would be provided along SR-94 between Melody Road and Reservation Road. Alternative 1 also widens Melody Road and Peaceful Valley Ranch Road to provide exclusive left-turn lanes onto SR-94 for overall improved intersection operation. The length of improvements along Melody Road and Peaceful Valley Ranch Road are approximately 700 feet and 500 feet, respectively. The intersection of SR-94/Reservation Road is also reconfigured with Alternative 1 to provide an intersection angle which meets current design standards. Retaining walls are proposed for Alternative 1 in order to minimize ROW requirements and environmental impacts. The five previously stated SR-94 intersection improvements apply to Alternative 1.

Alternative 2: Four-Acre Access (Daisy Drive)

Alternative 2 proposes improvements along SR-94 from an area north of Melody Road to an area south of the JIV property. Three options using the same entrance are addressed under Alternative 2. While maintaining the same entrance, each of these options contains separate ROW requirements. The JIV access driveway for Alternative 2 is located approximately 500 feet north of existing Reservation Road, at "Daisy Drive." Locating the access point at Daisy Drive decreases the intersection spacing to Melody Road, but shortens the project limits at the southern end. The Alternative 2 realignment of SR-94 maintains an alignment on the west side of existing SR-94, south of Daisy Drive, which results in one less horizontal curve along SR-94 within the project limits.

Alternative 2: Option 1 (Full Disturbed Area)

Option 1 proposes to improve SR-94 from approximately 1,200 feet north of Melody Road to approximately 1,400 feet south of existing Reservation Road, for a total length of approximately 0.8 miles. Similar to Alternative 1, SR-94 is realigned and widened as part of Option 1 to improve traffic operations. No design exceptions are needed for Option 1.

Proposed traffic signals and exclusive left-turn lanes for Alternative 2: Option 1 are the same as for Alternative 1, except the traffic signal for access to the JIV Gaming Project is provided at Daisy Drive instead of Reservation Road. In Addition, Option 1 would provide an additional northbound lane along SR-94 between Daisy Drive and Peaceful Valley Ranch Road to accommodate the expected dual left-turn lanes departing from the access driveway at Daisy Drive. Improvements to Melody Road and Peaceful Valley Ranch Road are the same for Alternatives 1 and 2: Option 1. Retaining walls associated with Alternative 2: Option 1 are reduced when compared to Alternative 1. The five previously stated SR-94 intersection improvements apply to Alternative 2: Option 1.

Alternative 2: Option 2 (Reduced Disturbed Area)

Option 2 proposes to improve SR-94 from about 1200 feet north of Melody Road to about 1400 feet south of existing Reservation Road, for a total length of approximately 0.8 miles. The project limits north and south along SR-94 are the same as stated for Alternative 2: Option 1. Alternative 2: Option 2 differs from Option 1 in that ROW impacts are reduced within private property and environmentally sensitive areas. The Option 2 centerline alignment for SR-94 is shifted to the west through the intersection with Melody Road with the use of a reduced radius, and a broken-back curve (two curves with a short tangent deflecting in the same direction) is introduced between Melody Road and the proposed access driveway at Daisy Drive. The introduction of a reduced radius and broken-back horizontal curvature helps facilitate the reduced ROW impact associated with Option 2.

Proposed traffic signals and left-turn lanes are the same as stated for Alternative 2: Option 1, with the exception that no exclusive left-turn lane is proposed on the departure from Peaceful Valley Ranch Road for Option 2. In addition, the alignment for Melody Road, as well as for Peaceful Valley Ranch Road, is shifted to the north with Option 2 to further reduce ROW impact to environmentally sensitive areas.

Alternative 2: Option 2 requires various retaining walls and fill walls to reduce the proposed footprint. The five previously discussed SR-94 intersection improvements apply to Alternative 2: Option 2.

Alternative 2: Option 3 (Minimum Disturbed Area)

Option 3 proposes to provide access to the JIV Gaming Project via Daisy Drive, the same as for Alternatives 2: Options 1 and 2. Alternative 2: Option 3, however, minimizes ROW impacts with the implementation of non-standard geometric elements requiring mandatory exceptions to Caltrans design standards. Reduced design speed from 55 mph to 45 mph, reduction in horizontal curvature, reduced shoulder width, reduced stopping sight distance along vertical curvature, increased maximum grade, and reduced superelevation rate are all incorporated to minimize impacts to ROW.

Improvements for Alternative 2: Option 3 begin approximately 800 feet north of Melody Road and continue to about 400 feet south of existing Reservation Road, for a total length of approximately 0.6 miles. Proposed traffic signals and exclusive left-turn lanes are the same for Options 2 and 3, except no left-turn is provided on the departure from Peaceful Valley Ranch Road. Lane widths are reduced along Melody Road in order to accommodate the roadway widening while minimizing ROW impacts. Unlike Alternative 2: Option2 which realigned Melody Road to the south, Alternative 2: Option 3 retains the existing southern edge of traveled way and widens Melody Road to the north. One fill-wall and three cut-walls are proposed along SR-94 for Option 3. No walls are proposed along Melody Road. The five previously discussed SR-94 intersection improvements apply to Alternative 2: Option 3.

Alternative 3: Melody Road Access

Alternative 3 provides access to the JIV Gaming Project via a proposed access driveway from Melody Road south to the JIV property. Therefore, no driveway improvements are proposed at either Reservation Road or Daisy Drive with this alternative. A wider footprint is necessary at the intersection of SR-94/Melody Road with this alternative in order to accommodate the necessary intersection improvements. In contrast to the other alternatives, Alternative 3 requires an additional northbound through lane north of Melody Road to accommodate a second exclusive left-turn lane proposed from Melody Road. A second exclusive left-turn lane is also required for the north to west move from SR-94 to Melody Road. A second through lane is also needed for westbound Melody Road leading to the proposed access driveway. The proposed centerline alignment for SR-94 for Alternative 3 is relatively the same as proposed for Alternative 2: Option 1. However, the extent of improvement along both SR-94 and Melody Road are different when compared to the other alternatives. The difference is related to the access driveway location. Alternative 3 improvements begin approximately 1300 feet north of Melody Road and continue to about 900 feet south of existing Reservation Road, for a total length of approximately 0.8 miles. The length of improvements along Melody Road is increased from about 750 feet to about 1300 feet with Alternative 3. Traffic signals are proposed at the intersection of SR-94/Melody Road, and also at the driveway access location along Melody Road. A driveway would continue from the new intersection at Melody Road and the driveway access and continue on private property south to the future gaming facility. This driveway would require a combination of cut/fill and retaining walls along its length. The five previously discussed SR-94 intersection improvements apply to Alternative 3.

Alternative 4: No Build Alternative

No roadway improvements would be constructed under the No Build Alternative.

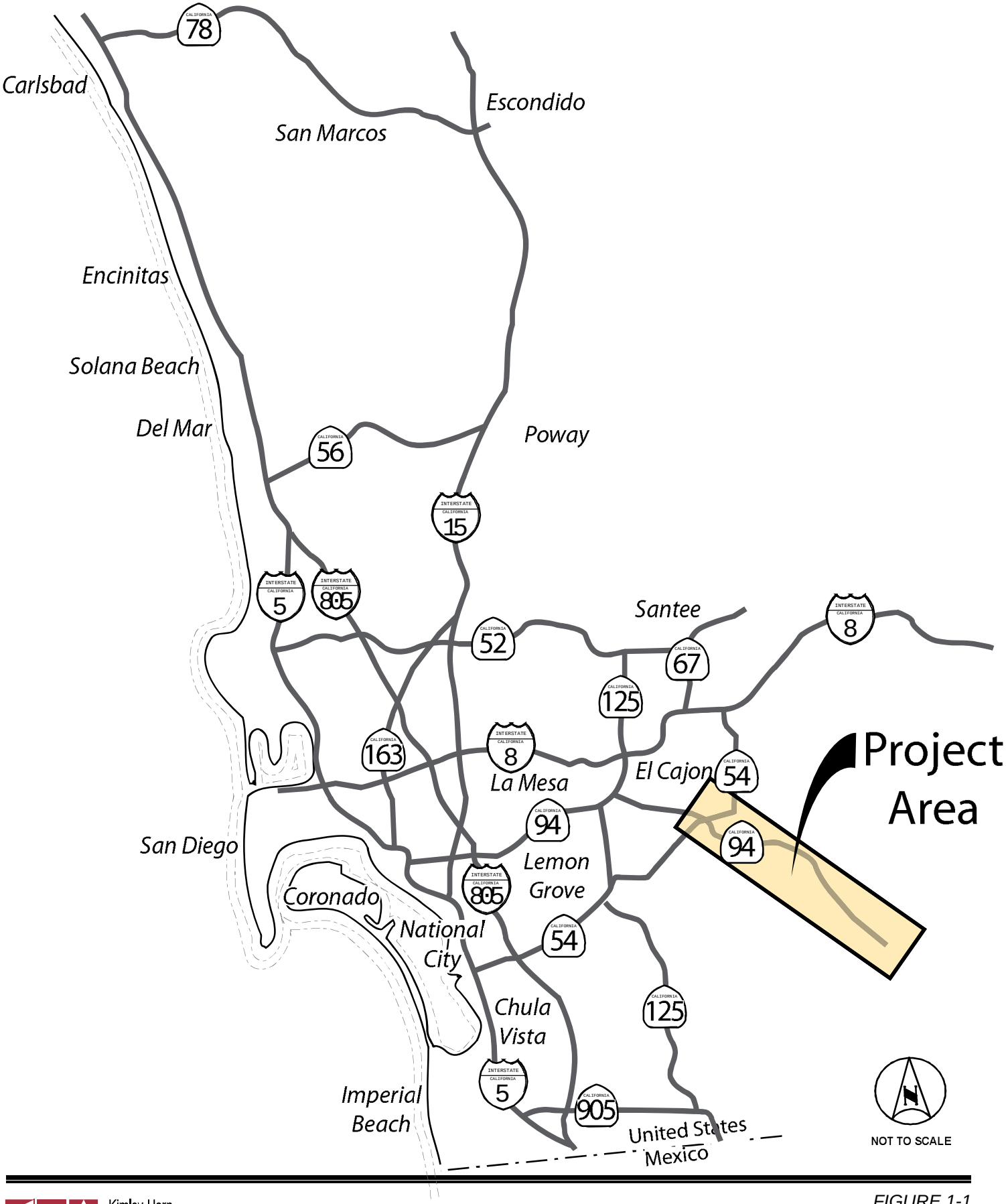

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FIGURE 1-1

Regional Vicinity Map

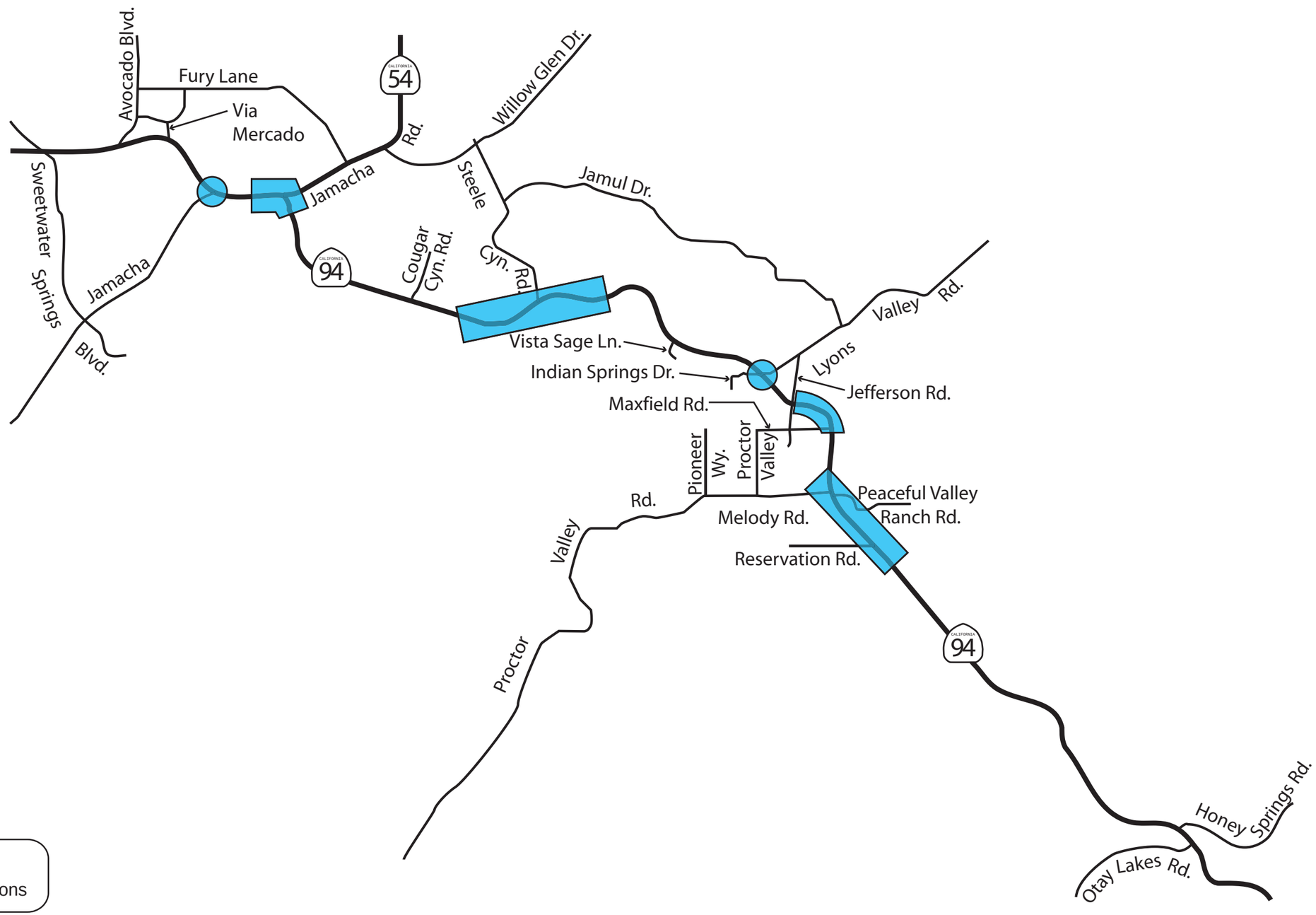

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FIGURE 1-2
Proposed Project Locations

2.0 METHODOLOGY

The following section describes the methodology used for the preparation of the traffic impact study for the Proposed Project.

Analysis Scenarios

The analysis scenarios to be evaluated were determined in coordination with Caltrans District 11 staff. A total of seven scenarios are analyzed within the traffic impact analysis for the Proposed Project. The scenarios are listed below:

- ***Existing Conditions***
  - Existing Baseline Conditions: Represents the traffic conditions of the existing street network with the use of traffic counts collected in the years 2009 through 2012.
  - Existing Baseline Plus Jamul Indian Village (JIV) Gaming Project Conditions: Represents the traffic conditions of the existing street network with the use of traffic counts collected in the years 2009 through 2012 and the addition of the JIV Gaming Project.
  - Existing Plus JIV Gaming Project Plus Proposed Project Conditions: Represents the existing traffic conditions with the addition of the proposed roadway changes to evaluate project level impacts. This scenario includes the traffic volumes generated by the JIV Gaming Project.
- ***Near Term Conditions (2015)***
  - Near Term No Project Conditions: Represents the traffic conditions of the street network assumed to be in place under the Near Term without project conditions. This scenario includes a projected traffic growth based on the addition of the JIV Gaming Project and other potential projects in the study area.
  - Near Term Plus Proposed Project Conditions: Represents the Near Term traffic conditions with the addition of the proposed roadway improvements and thus demonstrates cumulative impacts.
- ***Horizon Year Conditions (2035)***
  - Horizon Year No Project Conditions: Represents the traffic conditions of the street network to be in place under Horizon Year conditions, consistent with the Regional Transportation Plan, and is used to establish long-term, without project conditions for evaluating cumulative impacts and the degree to which the project would contribute to any such impacts. This scenario includes a projected traffic growth based on the addition of the JIV Gaming Project and other potential projects in the study area.
  - Horizon Year Plus Proposed Project Conditions: Represents the Horizon Year traffic conditions with the addition of the proposed roadway changes and thus demonstrates cumulative impacts.

Study Intersections

The study area includes all the intersection affected by the Proposed Project.

Table 2-1 lists all of the intersections included in the study area. As shown in Table 2-1, six study intersections are signalized and six study intersections are unsignalized. **Figure 2-1** displays the location of the study intersections.

TABLE 2-1
STUDY INTERSECTIONS

Intersection		Traffic Control (a)
1	SR 94 and Via Mercado	Signal
2	SR 94 and Jamacha Blvd.	Signal
3	SR 94 and Jamacha Rd.	Signal
4	SR 94 and Cougar Canyon Rd.	Signal
5	SR 94 and Steele Canyon Rd.	Signal
6	SR 94 and Lyons Valley Rd.	TWSC
7	SR 94 and Jefferson Rd.	Signal
8	SR 94 and Maxfield Rd.	OWSC
9	SR 94 and Melody Rd.	TWSC
10	SR 94 and Reservation Rd.	OWSC
11	SR 94 and Honey Springs Rd.	OWSC
12	SR 94 and Otay Lakes Rd.	OWSC

Notes:
(a) Signal = Traffic signal; OWSC = One –Way Stopped Control; TWSC = Two-Way Stopped Control

Traffic Volumes

With the exception of the intersections of Honey Springs Road and SR 94, Melody Drive and S94, and Maxfield Road and SR 94, all of the existing peak-hour traffic volume counts for the intersections within Caltrans right-of-way were collected on May 20 and May 21, 2009. For the same intersections, the Friday existing afternoon peak-hour counts were collected on January 29, 2010. The Saturday existing peak-hour counts were collected on May 9 and May 16, 2009. For the intersection of Honey Springs Road and SR 94, peak-hour counts were collected on September 15, 16, and 17, 2011. For the intersection of Melody Drive and SR 94, peak-hour counts were collected on October 26, 28, and 29, 2011. For the intersections of Maxfield Road and SR 94, the existing peak-hour counts were collected on September 12, 13, and 14, 2012. An evaluation of historical counts along SR 94 between the year 2001 and 2011 during the Tribal EE process found that the 2009 and 2010 volumes were the best representation for baseline conditions within the study area. **Appendix B** includes the sources for all existing traffic count volumes used in the study.

Traffic volumes for the Near Term No Project Condition were estimated by adding the traffic from the pending JIV Gaming Project and other approved and pending cumulative projects to the existing traffic volumes. The traffic volumes for approved and pending cumulative projects were extracted from Appendix 10 of the *Jamul Indian Village Final Tribal Environmental Evaluation*, dated January 2013 and approved *Traffic Impact Analysis for the Peaceful Valley Ranch*, dated April 24, 2007. In addition, to account for other projects not yet identified by Caltrans or the County of San Diego which could be

constructed before the Proposed Project, a traffic volume growth rate was added to the existing traffic counts for a period of five years (2010 to 2015). The traffic volume growth rate varies by location and it is based on a liner extrapolation of traffic volumes between the Horizon Year 2035 volumes and Existing plus JIV Gaming Project and other approved/pending cumulative project volumes. It should be noted that some of the cumulative projects may not be built. As such, the volumes associated with the Near Term No Project Conditions would represent a conservative and worst-case scenario. A more detailed description of the cumulative projects to be included in the study is provided in Chapter 6.

The Horizon Year Average Daily Traffic (ADT) volumes on the roadway segments in the study area were derived by comparing the Series 11 and 12 Regional Transportation Forecast Models prepared by the San Diego Association of Governments (SANDAG). The Series 11 (2030 Horizon Year) traffic forecast model was used because it incorporates the land use changes approved under the County of San Diego's General Plan. SANDAG has recently approved a new Regional Model (Series 12) that represents future traffic volumes estimated for the Year 2035 based on the County of San Diego's General Plan which is twenty years beyond the implementation of the Proposed Project. **Table 2-2** presents the future ADT volumes for SR 94 within the study area forecasted by both the Series 11 and the Series 12 models. As shown in the table, most roadway ADT volumes were higher in the Series 11 model for the Year 2030 than the volumes forecasted by the Series 2012 model for the Year 2035. Only along SR 94 within proximity to Melody Road, were the ADT volumes for the Series 12 model higher than the Series 11 model. As a conservative measure, the highest ADT volume between the Series 11 and Series 12 models was used for the preparation of the traffic impact study for the Proposed Project. Copies of the forecast model plots showing the forecasted ADT volumes are included in **Appendix C.**

To estimate the Horizon Year turning movement volumes at the study intersections, the existing turning movements at each respective study intersection were extrapolated based on the projected ADT volumes along each segment. Each respective movement was derived using an iterative approach that balances the inflows and outflows for each approach. The input values include the existing turning movement volumes and future year peak-hour approach and departure volumes along each leg of the intersection. The future peak-hour approach volumes were estimated by applying the existing peak-hour factor (K-factor) and directional distributional percentage (D-factor) to the future ADT volumes along each approach. A more detailed description of the methodology used to forecast turning movement volumes is contained in National Cooperative Highway Research Program (NCHRP) 255 *Highway Traffic Data for Urbanized Area Project Planning and Design, Chapter 8*. An Excel model computes the forecast turning volumes from existing turning movement volumes and forecasted approach and departure volumes by the techniques described in NCHRP 255. As a conservative approach, if a turning movement volume produced by this model was less than the existing count for that movement, manual adjustments were made to assure that all forecast horizon year volumes would be equal to or greater than the existing turning movement counts. A copy of the NCHRP 255 Report and Excel calculation worksheets are included in **Appendix D**.

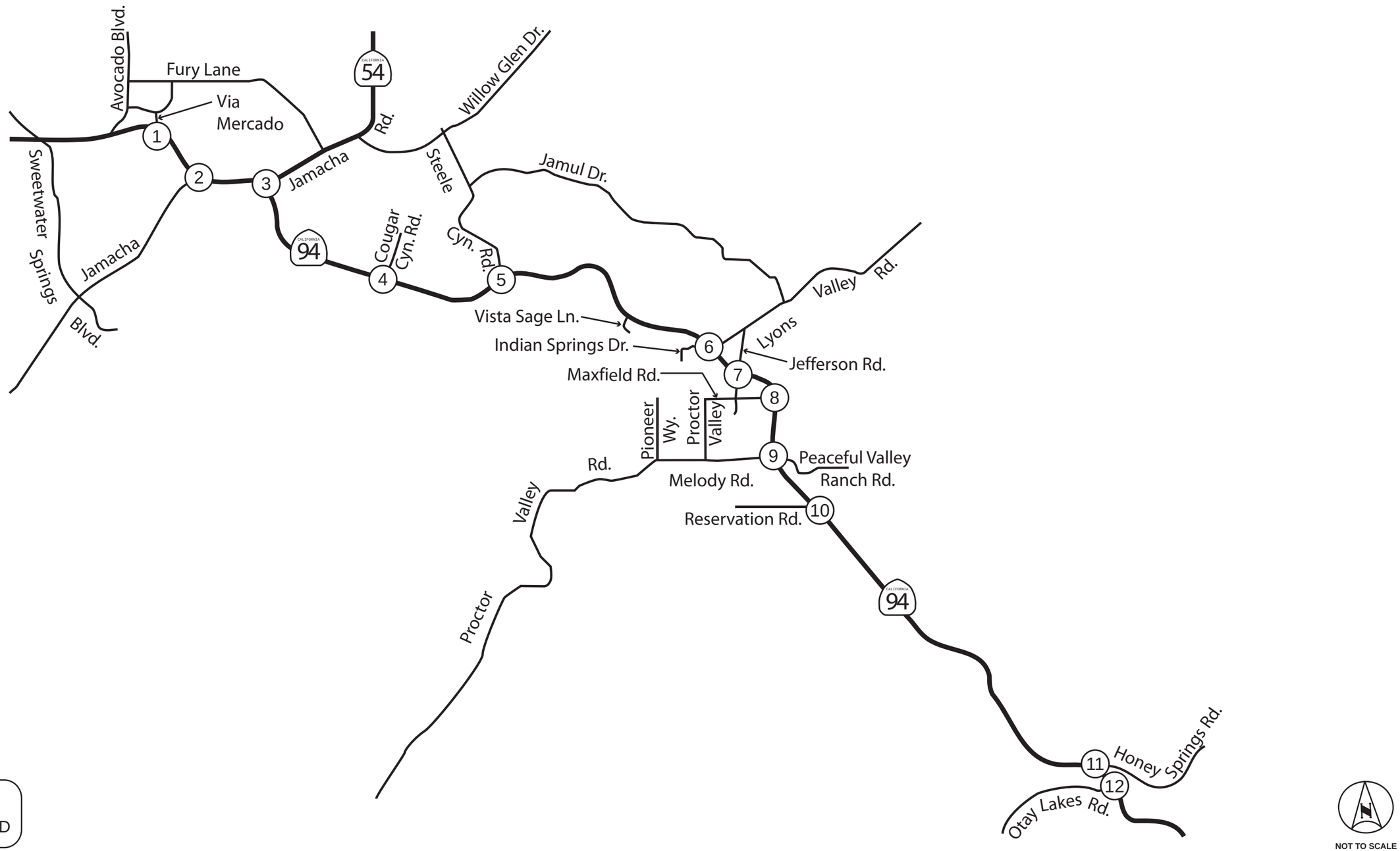


FIGURE 2-1
Study Intersections

TABLE 2-2:
COMPARISON BETWEEN SERIES 11 AND SERIES 12 FUTURE YEAR ADT VOLUMES

Roadway Segment	Series 11 ADT Volumes (Year 2030)	Series 12 ADT Volumes (Year 2035)
Sweetwater Springs Blvd.		
between Jamacha Blvd. and Austin Dr.	27,000	17,100
Jamacha Blvd.		
between SR 94 and Sweetwater Springs Blvd.	26,000	22,800
Jamacha Rd. (SR 54)		
between SR 94 and Fury Ln.	78,000	43,050
between Willow Glen Dr. and Brabham St.	34,000	20,500
Steele Canyon Rd.		
between SR 94 and Jamul Dr.	9,000	8,100
between Jamul Dr. and Willow Glen Dr.	24,000	24,400
Jamul Dr.		
between Steele Canyon Rd. and Lyons Valley Rd.	11,000	10,700
Willow Glen Dr.		
between Jamacha Rd. and Steele Canyon Rd.	26,000	25,000
between Steele Canyon Rd. and Hillsdale Rd.	18,400	11,200
Lyons Valley Rd.		
between SR 94 and Jefferson Rd.	8,300	2,700
between Jefferson Rd. and Jamul Dr.	12,000	7,800
between Jamul Dr. and Myrtle St.	13,000	13,300
Jefferson Rd.		
between SR 94 and Lyons Valley Rd.	11,000	7,700
Melody Rd.		
between SR 94 and Proctor Valley Rd.	5,000	1,900
Proctor Valley Rd.		
between Melody Rd. and Pioneer Wy.	14,000	11,400
Honey Springs Rd.		
between SR 94 and Mother Grundy Truck Trail	4,000	3,300
Otay Lakes Rd.		
between SR 94 and Otay Mountain Truck Trail	9,000	4,200
SR 94 (Campo Rd.)		
between Sweetwater Springs Blvd. and Via Mercado	66,000	53,900
between Via Mercado and Jamacha Blvd.	62,000	49,400
between Jamacha Blvd. and Jamacha Rd.	79,000	67,100
between Jamacha Rd. and Cougar Canyon Rd.	26,000	25,900
between Cougar Canyon Rd. and Steele Canyon Rd.	23,000	22,700
between Steele Canyon Rd. and Lyons Valley Rd.	27,000	24,200
between Lyons Valley Rd. and Jefferson Rd.	23,000	23,700
between Jefferson Rd. and Melody Rd.	17,000	14,100
between Melody Rd. and Panhandle Dwy.	13,000	13,100
between Panhandle Dwy. and Honey Springs Rd.	13,000	12,800
between Honey Springs Rd. and Otay Lakes Rd.	17,000	10,300
between Otay Lakes Rd. and Otay Truck Trail	17,000	10,100

Notes:
ADT = Average Daily Traffic
Volumes obtained from SANDAG's traffic forecast models Series 11 and Series 12 as noted.

K:\SND_TPTO\095848001 - JIV Design\Reports\Traffic Report\TIA-CEQA\Excel\Archive\[848001RS01.xlsm]Comparison

Analysis Process

The analysis process includes determining the operations at the study intersections for the weekday a.m. and p.m. peak periods, Friday p.m. peak-hours and Saturday p.m. peak-hours. The weekday a.m. peak period is defined as the morning peak-hour between 7:00 a.m. and 9:00 a.m., which represent the period were the majority of commuter traffic would occur. The weekday, Friday and Saturday p.m. peak period is defined as the afternoon peak-hour between 4:00 p.m. and 6:00 p.m. which represents the period were the majority of commuter traffic would occur. In addition, the operations along SR 94 were determined by using the *Highway Capacity Manual (HCM)* peak-hour arterial and two-lane highway analysis methodology.

Signalized and Unsignalized Intersections HCM Methodology

The 2000 *HCM* published by the Transportation Research Board establishes procedures to evaluate highway facilities and rate their ability to process traffic volumes. The terminology "level of service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values.

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The LOS for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. At an all-way stop controlled intersection, the delay reported is the average control delay of the intersection. At a one-way or two-way stop controlled intersection, the delay reported represents the worst movement, which are typically the left-turns from the minor street approach.

The criteria for the various levels of service designations are given in **Table 2-3**.

Per Caltrans requirements, all signalized and unsignalized intersections are expected to operate at LOS C or better.

To analyze the operations of both signalized and unsignalized intersections, Synchro 8.0 (Trafficware) was used for the analysis. Synchro 8.0 uses the methodologies outlined in the *HCM*.

The following list contains the assumptions used for the intersection analyses:

- Peak-hour factor (PHF) = Existing peak-hour factors were used for the Existing and Near Term scenarios. Synchro's default value of 0.92 was used for the Horizon Year scenarios. The peak-hour factor represents the relationship between the peak 15-minute flow rate and the full hourly volume to estimate the most critical time period for evaluation.
- Percent of heavy vehicle (PHV) = Measured in field PHV was used at all locations with available data. For locations with no PHV data, a 2 percent default value was used.
- Signal Timing = All cycle lengths were optimized and account for the minimum pedestrian crossing times.

TABLE 2-3
LOS CRITERIA FOR INTERSECTIONS

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections (a)	**Unsignalized Intersections (b)**	
A	≤10.0	≤10.0	Operations with very low delay and most vehicles do not stop.
B	>10.0 and ≤20.0	>10.0 and ≤15.0	Operations with good progression but with some restricted movement.
C	>20.0 and ≤35.0	>15.0 and ≤25.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and ≤55.0	>25.0 and ≤35.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55.0 and ≤80.0	>35.0 and ≤50.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	>50.0	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Notes:
(a) 2000 Highway Capacity Manual, Chapter 16, Page 2, Exhibit 16-2
(b) 2000 Highway Capacity Manual, Chapter 17, Page 2, Exhibit 17-2

Intersecting Lane Vehicle (ILV) Methodology

Per Caltrans District 11 requirements, intersection analysis must be performed at each Caltrans-owned signalized intersection affected by the Proposed Project using the intersecting lane vehicle (ILV) procedure, which is discussed in further detail in the Caltrans Highway Design Manual Topic 406, page 400-23. The ILV analysis is used to estimate the capacity of a signalized intersection when the phasing is relatively simple. The intersection is thought to be at capacity when the ILV is 1,500 vehicles per hour. **Table 2-4** describes the traffic flow conditions of ramp intersections at various levels of operations.

TABLE 2-4
ILV CRITERIA AT RAMP INTERSECTIONS

ILV/hr (a)	Result	Description
< 1200	Below Capacity	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free mid-block operations.
1200 – 1500	Approaching Capacity	Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
> 1500	Above Capacity	Stop-and-go operation with severe delay and heavy congestion [(b)]. Traffic volume is limited by maximum discharge rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restricted, mainline congestion can impede orderly discharge through the intersection.

Notes:
Based on the Caltrans Highway Design Manual, Table 406 "Traffic Flow Conditions at Intersections at Various Levels of Operation", page 400-23.
(a) = Intersecting Lane Vehicles/hour (ILV/hr)
(b) = The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500 ILV/hr, and the excess will be delayed in a queue.

HCM Peak-Hour Arterial Analysis

A peak-hour arterial analysis was conducted for segments of SR 94 between Via Mercado and Jefferson Road - Proctor Valley Road using the 2000 *HCM Chapter 15* procedures, as this segment functions as an urban arterial due to the number of signals along this corridor. Peak-hour arterial analysis estimates average travel speed on the given facility based on the operations of controlling intersections. This type of analysis provides a more accurate representation of street segment LOS than ADT-based evaluation because it considers peak-hour volumes and incorporates the capacity benefits of intersection turn lanes. Based on its speed, SR 94 is classified as a Class I arterial facility. The criteria for the various level of service designation for Class I arterials is given in **Table 2-5.**

TABLE 2-5
LOS CRITERIA FOR URBAN ARTERIALS CLASS I FACILITIES

LOS	Average Travel Speed (MPH) (a)	Description
A	>42.0	Free-flow operations, motorists can travel at desired speed and passing demand is well below capacity.
B	>34.0 and ≤42.0	Stable flow, with speeds generally higher than 50 miles per hour. The passing demand to maintain desired speeds becomes significant.
C	>27.0 and ≤34.0	Stable flow at slower speeds. Individuals become noticeably affected by interactions with others, and percent time-spent-following drastically increases.
D	>21.0 and ≤27.0	Unstable flow, with slower speeds and long platoons. Turning vehicles and roadside distractions cause major shock waves in the traffic stream.
E	>16.0 and ≤21.0	Operating conditions at or near capacity. Speeds are slow, and passing is virtually impossible. Platooning becomes intense.
F	< 16.0	Heavily congested flow.

Notes:
(a) 2000 Highway Capacity Manual, Chapter 15, Page 15-3, Exhibit 15-2

HCM Peak-Hour Two-Lane Highway Analysis

For the two-lane segment of SR 94 where the intersections are not signalized, the 2000 HCM Manual "two-lane highway" methodology was used.

According to the Caltrans SR 94 operations report, the highway is categorized as a Class I facility.

Level of service for Class I highways is based on a combination of two parameters: percent time spent following (PTSF) and average travel speed in miles/hour (MPH). The PTSF is the average percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway. This parameter represents the freedom to maneuver and convenience of travel along a facility.

The criteria for the various level of service designations for Class I two-lane highway facilities are given in **Table 2-6**.

TABLE 2-6
LOS CRITERIA FOR TWO-LANE HIGHWAY CLASS I FACILITIES

LOS	Percent time spent following (PTSF) (a)	Average Travel Speed (MPH) (a)	Description
A	≤35.0	>55.0	Free-flow operations, motorists can travel at desired speed and passing demand is well below capacity.
B	>35.0 and ≤50.0	>50.0 and ≤55.0	Stable flow, with speeds generally higher than 50 miles per hour. The passing demand to maintain desired speeds becomes significant.
C	>50.0 and ≤65.0	>45.0 and ≤50.0	Stable flow at slower speeds. Individuals become noticeably affected by interactions with others, and percent time-spent-following drastically increases.
D	>65.0 and ≤80.0	>40.0 and ≤45.0	Unstable flow, with slower speeds and long platoons. Turning vehicles and roadside distractions cause major shock waves in the traffic stream.
E	≤80.0	<40.0	Operating conditions at or near capacity. Speeds are slow, and passing is virtually impossible. Platooning becomes intense.
F	N/A	N/A	Heavily congested flow.

Notes:
(a) 2000 Highway Capacity Manual, Chapter 12

The two-lane highway calculations were performed using the Highway Capacity Software (HCS) 2000 (Version HCS+5.5).

Significance Determination

The Caltrans *Guide for the Preparation of Traffic Impact Studies,* dated December 2002, was used to determine the Proposed Project impacts to facilities within Caltrans's jurisdiction. These guidelines state that Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" for all of its facilities. When an existing State Highway facility is operating at less than the appropriate target LOS, the existing measure of effectiveness (MOE) for that facility should be maintained. This means that, for facilities that operate at LOS D, E or F, a significant project impact would occur if a project causes a decrease in the MOE for that facility. **Table 2-7** shows the MOE that is used for each type of Caltrans facility. By way of example, if a signalized intersection were operating at a mid-range LOS D (45 seconds of delay per vehicle) and the project were to cause the delay to increase by any measure, the project would be deemed to cause a significant impact at that intersection. There is not a significant threshold established for the ILV evaluation.

TABLE 2-7
CALTRANS MEASURE OF EFFECTIVENESS BY FACILITY TYPE

Facility	Measurement of Effectiveness (MOE)
Signalized Intersection	Control delay per vehicle (sec/veh)
Unsignalized Intersection	Average control delay per vehicle (sec/veh)
Arterial Analysis	Average travel speeds (mile/hr)
Two-lane Highway	Percent time following and average travel speeds (mile/hr)

Notes:
Source: Guide for the Preparation of Traffic Impact Studies, dated December 2002. Appendix C.

Two classes of impacts are measured for significance: direct impacts and cumulative impacts. Direct traffic impacts are those projected to occur with the addition of the Proposed Project traffic to existing traffic volumes where Caltrans significance criteria (as applicable) are exceeded. Direct impacts are deemed to be mitigated when mitigation measures improve the intersection or roadway segment to an acceptable level of service or equal to or to a level that is better than pre-project conditions.

Cumulative traffic impacts are those projected to occur when project traffic is added to "future traffic," and where this resulting combined future traffic exceeds Caltrans significance criteria. Future traffic is based on additional proposed developments in the area (short-term cumulative) or when the affected community plan area reaches full planned build out (long-term cumulative). A project would be considered to have a cumulatively considerable impact when the addition of the project traffic to a future cumulative impact caused by other developments exceeds the Caltrans significance criteria. The project applicant would be responsible for mitigating its cumulatively considerable impact by providing a fair share contribution toward the implementation of mitigation measures needed to improve the intersection or roadway segment to an acceptable level of service or to a level that is equal to better than pre-project operations. A fair share contribution is based on the project's proportionate traffic contribution to the overall future traffic volumes at locations which exceed Caltrans significance criteria (as applicable).

3.0 EXISTING BASELINE CONDITIONS

This section summarizes the existing roadway circulation network, and existing traffic volumes within the study area.

Road Network

The following provides a description of the existing street system within the vicinity of the study area.

SR 94 begins near downtown San Diego as an eight-lane, access-controlled freeway. As it proceeds to the east, it narrows to a four-lane facility, with the freeway terminating at Avocado Boulevard. SR 94 then becomes a four-lane major roadway with signalized at-grade intersections between Avocado Boulevard and Jamacha Boulevard. In the relatively short section between Jamacha Boulevard and Jamacha Road, it is a six-lane road. South and east of Jamacha Road, it is a four-lane facility, which then transitions to a two-lane cross section. In the vicinity of the Proposed Project site, it is a two-lane, undivided, conventional highway that is also known as Campo Road. Bike lanes are currently not provided and curbside parking is prohibited along both sides of the roadway. Bus stops are provided intermittently along the roadway. SR 94 is part of the County of San Diego Bicycle Network System. SR 94 is approximately 26 feet wide with shoulders generally varying from 2 to 8 feet in the study area. The posted speed limit is 55 MPH. A two-way left-turn lane striping is provided along sections of the roadway where driveway access is denser. The segment between Cougar Canyon Road and Steele Canyon Road provides a two-way left-turn lane. SR 94 is classified as a prime arterial north of Melody Road and a major road south of Melody Road on the County of San Diego Circulation Element.

Jamacha Boulevard is constructed as a six-lane prime arterial south of SR 94. The posted speed limit along this corridor is 45 MPH. This roadway segment is built to its ultimate classification.

Jamacha Road is constructed as a six-lane prime arterial east of SR 94. The posted speed limit along this corridor is 45 MPH. This roadway segments is built to its ultimate classification.

Steele Canyon Road is currently constructed as a two lane undivided roadway, providing one travel lane in the north direction and one travel lane in the south direction. Steele Canyon Road is signalized at SR 94, Jamul Drive and Willow Glen Drive. Steele Canyon Road has a roadway width of 45 feet with no shoulders provided. The posted speed limit on Steele Canyon Road is 45 MPH. Steele Canyon Road is classified as a collector road in the County of San Diego Circulation Element. Between Jamul Drive and Heatherwood, a two-way left-turn lane is provided to facilitate access to adjacent properties along both sides of the road.

Lyons Valley Road is a two-lane undivided roadway. Bike lanes are provided and curbside parking is prohibited. Lyons Valley Road has a current roadway width of 35 feet with no shoulders provided. The speed limit is posted at 45 MPH.

Jefferson Road is a two-lane undivided roadway with a posted speed limit of 40 MPH. Currently, Jefferson Road has a roadway width of 30 feet with no shoulders provided. Jefferson Road is an unclassified roadway within the County of San Diego.

Melody Road is currently constructed as a two-lane undivided roadway providing one lane of travel per direction. No bike lanes or bus stops are provided and curbside parking is prohibited. Currently, Melody Road has a roadway width of 40 feet with no shoulders provided.

Figure 3-1 shows the existing geometrics for the intersections within the study area and **Figure 3-2** shows the existing number of lanes and functional classification for the roadway segments within the study area.

Traffic Volumes

With the exception of the intersections of Honey Springs Road and SR 94, Melody Drive and SR 94, and Maxfield Road and SR 94, all of the existing peak-hour traffic volume counts for the intersections within Caltrans right-of-way were collected on May 20 and May 21, 2009. For the same intersections, the Friday existing afternoon peak-hour counts were collected on January 29, 2010. The Saturday existing peak-hour counts were collected on May 9 and May 16, 2009. For the intersection of Honey Springs Road and SR 94, peak-hour counts were collected on September 15, 16, and 17, 2011. For the intersection of Melody Drive and SR 94, peak-hour counts were collected on October 26, 28, and 29, 2011. For the intersections of Maxfield Road and SR 94, the existing peak-hour counts were collected on September 12, 13, and 14, 2012. An evaluation of historical counts along SR 94 between the year 2001 and 2011 during the Tribal EE process found that the 2009 and 2010 volumes were the best representation for baseline conditions within the study area. **Appendix B** includes the sources for all existing traffic count volumes used in the study. **Appendix B** includes a copy of all the sources for all existing traffic counts volumes to be used in the study.

Figure 3-2 illustrates the existing peak-hour traffic volumes at the study intersections for a typical weekday. **Figure 3-3** illustrates existing traffic volumes at the study intersections for typical Friday and Saturday afternoon peak-hour periods.

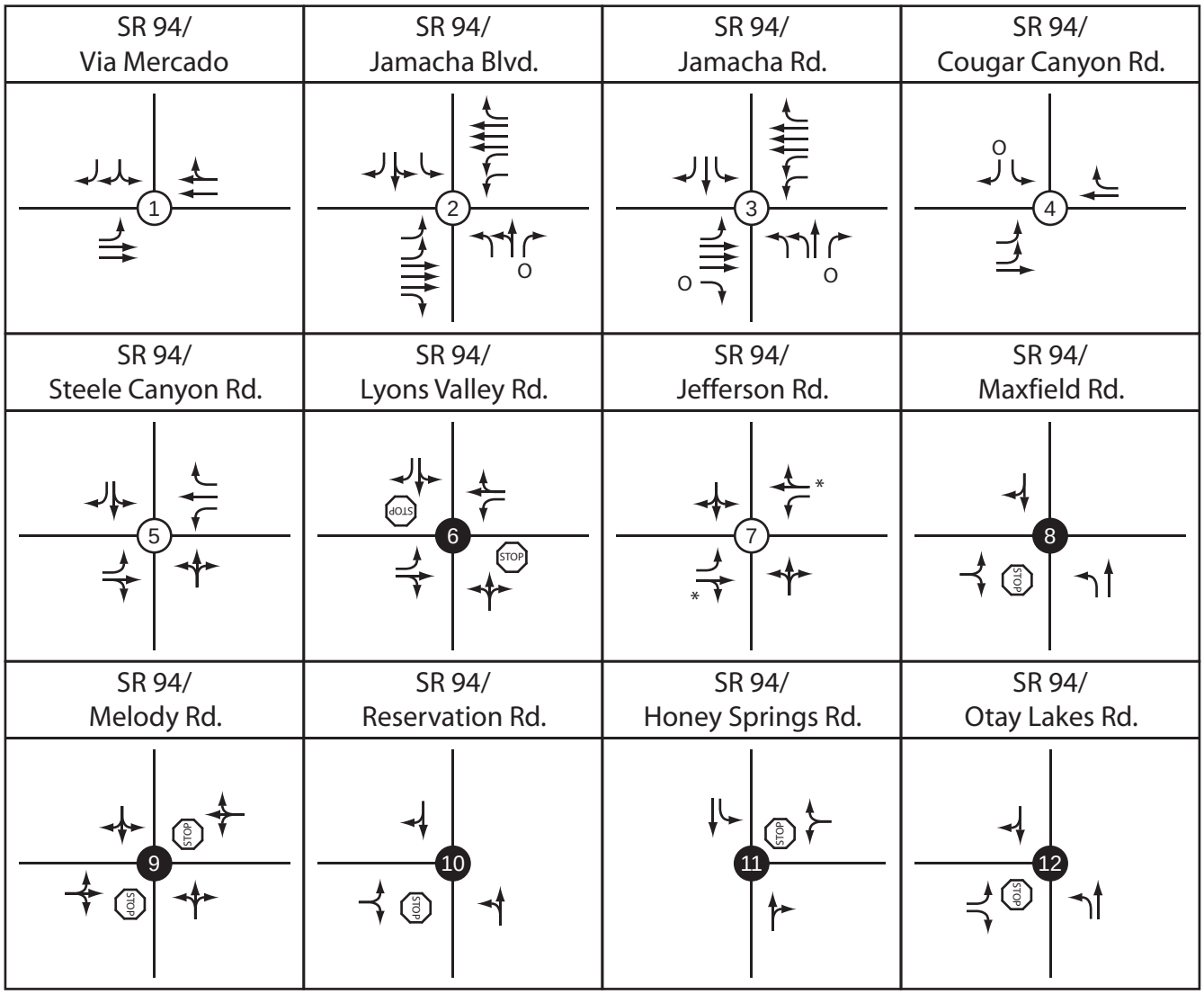
Intersection Analysis (HCM)

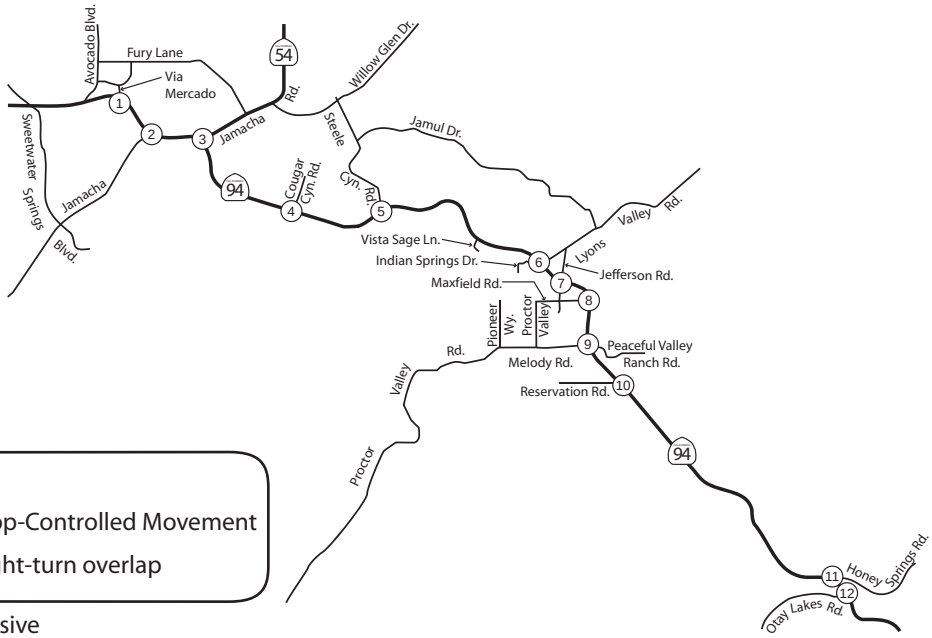
Tables 3-1 and 3-2 display the peak-hour LOS analysis results for the study intersections under Existing Conditions for all peak-hour periods analyzed. As shown in the tables, all intersections currently operate at LOS C or better during all peak periods analyzed, except for the following intersection:

- SR 94 (Campo Road) and Indian Spring Road/Lyons Valley Road (LOS F weekday a.m. and p.m. peak-hour, LOS F Friday p.m. peak-hour and LOS E Saturday p.m. peak-hour)

The SR 94 (Campo Road) and Lyons Valley Road intersection is currently a two-way stop controlled intersection. During the peak-hour operations, considerable delay is experienced by vehicles entering the intersection from Lyons Valley Road as the through traffic along SR 94 (Campo Road) does not provide sufficient vehicle gaps needed to enter the intersection.

Appendix E contains the intersections LOS calculation worksheets.





Legend:

- (X) Signalized
- (X) Unsignalized
- STOP Stop-Controlled Movement
- O Right-turn overlap

*Right-turn functions as exclusive

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 3-1

Existing Intersection Geometrics

SR 94 Improvement Project

1	233 / 111	94 / 212	**Via Mercado**	141 / 154 1928 / 1271	**SR 94**	**2**	0 / 3 3 / 3 3 / 6	**Jamacha Blvd.**	13 / 8 1770 / 1281 440 / 485	**SR 94**	**3**
54 / 201 965 / 2056						5 / 2 1003 / 2131 63 / 135			203 / 116 5 / 4 519 / 629		

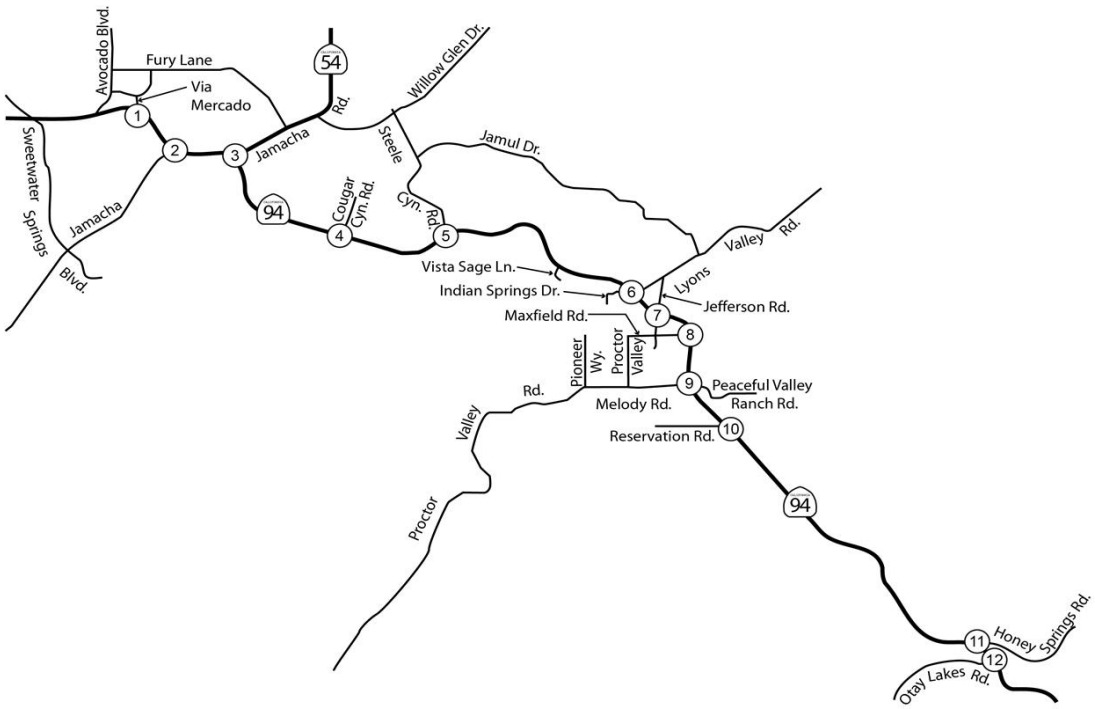
36 / 59 9 / 15 5 / 27	**Dwy.**	10 / 21 1208 / 1146 93 / 94	**Jamacha Rd.**	**4**	356 / 138	116 / 76	**Cougar Canyon Rd.**	277 / 45 738 / 413	**SR 94**	**5**	245 / 96
71 / 89 943 / 1895 518 / 783			**SR 94**		302 / 125 301 / 812						

101 / 211	**Steele Canyon Rd.**	158 / 84 763 / 364 3 / 5	**SR 94**	**6**	353 / 162	2 / 1 3 / 3	**Lyons Valley Rd.**	1 / 5 598 / 264 7 / 2	**SR 94**	**7**	67 / 17
113 / 108 315 / 760 0 / 1		3 / 1 1 / 2 1 / 20			163 / 326 254 / 583 7 / 9		**Indian Springs Dr.**	11 / 6 1 / 2 3 / 6			

25 / 31 44 / 39	**Jefferson Rd.**	53 / 41 424 / 206 2 / 3	**SR 94**	**8**	10 / 52 180 / 458	**SR 94**					
14 / 17 194 / 413 35 / 114							**Maxfield Rd.**	6 / 33 4 / 31	6 / 12 459 / 199		

9	11 / 8 142 / 440 11 / 3	**SR 94**	1 / 4	**Peaceful Valley Ranch Rd.**	**10**	199 / 414	**SR 94**			**11**	110 / 350 16 / 73
Melody Rd.					**Reservation Rd.**			410 / 198			

SR 94	67 / 35 26 / 13	**Honey Springs Rd.**	**12**	72 / 36 140 / 306	**SR 94**						
		334 / 131 12 / 27	**Otay Lakes Rd.**	25 / 54 52 / 76	68 / 53 295 / 114						



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 3-2

Existing Baseline Peak-Hour Traffic Volumes (Weekday)

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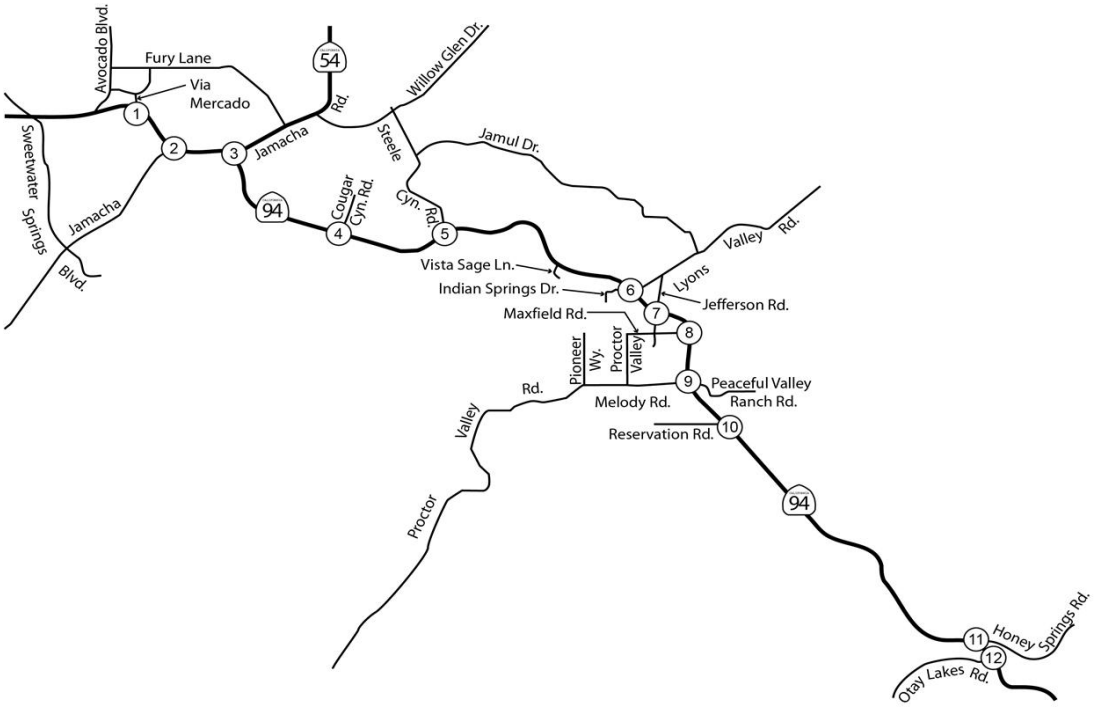
SR 94 Improvement Project

1	⇦ 157 / 123 ⇨ 205 / 169 **Via Mercado** ⇨ 183 / 164 ⇦ 1380 / 1233 **SR 94** 164 / 96 1929 / 1555 ⇨	**2**	⇦ 1 / 4 ⇩ 2 / 3 ⇨ 8 / 5 **Jamacha Blvd.** ⇨ 6 / 40 ⇦ 1444 / 1295 ⇨ 545 / 457 **SR 94** 5 / 56 1976 / 1552 ⇨ 128 / 112 ⇨ ⇨ ⇧ ⇨ 113 / 87 2 / 9 698 / 526
3	⇦ 79 / 62 ⇩ 32 / 19 ⇨ 29 / 19 **Dwy.** **SR 94** ⇨ 25 / 15 ⇦ 1224 / 1087 ⇨ 111 / 82 **Jamacha Rd.** 113 / 80 1738 / 1423 ⇨ 847 / 579 ⇨ **SR 94** ⇨ ⇧ ⇨ 685 / 675 26 / 32 112 / 84	**4**	⇦ 109 / 5 ⇨ 67 / 1 **Cougar Canyon Rd.** ⇨ 46 / 3 ⇦ 425 / 430 **SR 94** 84 / 4 861 / 500 ⇨
5	⇦ 103 / 67 ⇩ 5 / 2 ⇨ 230 / 127 **Steele Canyon Rd.** ⇨ 106 / 92 ⇦ 343 / 412 ⇨ 5 / 2 **SR 94** 106 / 57 783 / 462 ⇨ 1 / 0 ⇨ ⇨ ⇧ ⇨ 1 / 1 3 / 2 18 / 7	**6**	⇦ 189 / 187 ⇩ 1 / 0 ⇨ 3 / 0 **Lyons Valley Rd.** ⇨ 3 / 5 ⇦ 284 / 320 ⇨ 3 / 4 **SR 94** 331 / 183 647 / 406 ⇨ 14 / 7 ⇨ **Indian Springs Dr.** ⇨ ⇧ ⇨ 6 / 6 1 / 0 3 / 4
7	⇦ 21 / 18 ⇩ 25 / 21 ⇨ 53 / 24 **Jefferson Rd.** ⇨ 26 / 19 ⇦ 198 / 258 ⇨ 3 / 2 **SR 94** 27 / 17 473 / 282 ⇨ 121 / 89 ⇨ **Proctor Valley Rd.** ⇨ ⇧ ⇨ 69 / 57 38 / 20 22 / 10	**8**	⇦ 28 / 13 ⇩ 501 / 350 **SR 94** **Maxfield Rd.** 19 / 9 ⇨ 27 / 14 ⇨ ⇨ ⇧ 4 / 6 204 / 162
9	⇦ 12 / 14 ⇩ 513 / 280 ⇨ 2 / 2 **SR 94** **Melody Rd.** ⇨ 4 / 4 ⇨ 1 / 0 **Peaceful Valley Ranch Rd.** 11 / 9 ⇨ 3 / 3 ⇨ ⇨ ⇧ 5 / 1 211 / 241	**10**	⇦ 0 / 2 ⇩ 499 / 289 **SR 94** **Reservation Rd.** 0 / 4 ⇨ ⇨ ⇧ 0 / 1 186 / 218
11	⇩ 359 / 225 ⇨ 63 / 39 **SR 94** ⇨ 27 / 37 ⇨ 14 / 15 **Honey Springs Rd.** ⇧ ⇨ 207 / 164 22 / 17	**12**	⇦ 50 / 33 ⇩ 372 / 196 **SR 94** **Otay Lakes Rd.** 39 / 30 ⇨ 95 / 49 ⇨ ⇨ ⇧ 42 / 39 104 / 134



Legend

X / Y = FRI / SAT PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 3-3

Existing Baseline Peak-Hour Traffic Volumes (Friday/Saturday)

TABLE 3-1:
EXISTING BASELINE
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	EXISTING BASELINE	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	AM	18.9	B
			PM	20.6	C
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	AM	15.3	B
			PM	29.6	C
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	AM	23.8	C
			PM	21.2	C
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	AM	17.9	B
			PM	10.2	B
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	AM	28.8	C
			PM	24.7	C
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	AM	589.6	**F**
			PM	73.6	**F**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	AM	10.9	B
			PM	10.1	B
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	AM	12.3	B
			PM	14.8	B
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	AM	14.5	B
			PM	14.4	B
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	AM	Under this scenario, this intersection does not have conflicting movements.	
			PM		
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	AM	12.0	B
			PM	11.0	B
12	SR 94 (Campo Rd) & Otay Lakes Rd.	One-Way Stop	AM	11.2	B
			PM	12.3	B

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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TABLE 3-2:
EXISTING BASELINE
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	EXISTING BASELINE	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	FRI PM	19.9	B
			SAT PM	13.8	B
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	FRI PM	32.9	C
			SAT PM	15.8	B
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	FRI PM	24.5	C
			SAT PM	21.0	C
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	FRI PM	10.0	B
			SAT PM	13.5	B
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	FRI PM	27.3	C
			SAT PM	26.2	C
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	FRI PM	125.3	**F**
			SAT PM	40.7	**E**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	FRI PM	15.9	B
			SAT PM	13.8	B
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	FRI PM	14.2	B
			SAT PM	11.6	B
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	FRI PM	16.6	C
			SAT PM	12.9	B
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	FRI PM	Under this scenario, this intersection does not have conflicting movements.	
			SAT PM		
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	FRI PM	12.0	B
			SAT PM	10.5	B
12	SR 94 (Campo Rd) & Otay Lakes Rd.	One-Way Stop	FRI PM	12.6	B
			SAT PM	10.6	B

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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Intersection Analysis (ILV)

Tables 3-3 and 3-4 display the ILV analysis results for the Caltrans-owned signalized intersections under Existing Baseline Conditions for all peak-hours analyzed. As shown in the table, all intersections along SR 94 (Campo Road) would operate at below capacity during all peak periods, except for the following intersections, which operate at approaching capacity:

- SR 94 (Campo Road) & Via Mercado (weekday a.m. and p.m. peak-hours); and
- SR 94 (Campo Road) & Jamacha Boulevard (weekday p.m. peak-hour; Friday p.m. peak-hour).

Appendix F contains the ILV worksheets.

HCM Peak-Hour Arterial Analysis

Tables 3-5 and 3-6 display the peak-hour arterial analysis along SR 94 (Campo Road) between Via Mercado and Jefferson Road/Proctor Valley Road under Existing Baseline Conditions. As shown in the table, the roadway segments currently function at LOS A.

Appendix G contains the peak-hour arterial analysis worksheets.

HCM Peak-Hour Two-Lane Highway Analysis

Table 3-7 displays the peak-hour two-lane highway analysis along SR 94 (Campo Road) between Jefferson Road/Proctor Valley Road and Otay Lakes Road under Existing Baseline Conditions. The table shows the results of the weekday and weekend conditions. As shown in the tables, all roadway segments within the study area currently function at LOS D under the Existing Baseline Conditions.

Appendix H contains the two-way two-lane analysis worksheets.

TABLE 3-3:
EXISTING BASELINE
ILV ANALYSIS (WEEKDAY)

INTERSECTION		PEAK HOUR	EXISTING BASELINE	
			ILV TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	1253	Approaching Capacity
		PM	1240	Approaching Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	895	Below Capacity
		PM	1346	Approaching Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	997	Below Capacity
		PM	1009	Below Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1094	Below Capacity
		PM	888	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1126	Below Capacity
		PM	999	Below Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	AM	646	Below Capacity
		PM	635	Below Capacity

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 3-4:
EXISTING BASELINE
ILV ANALYSIS (FRIDAY/SATURDAY)

INTERSECTION		PEAK HOUR	EXISTING BASELINE	
			ILV TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	1170	Below Capacity
		SAT PM	964	Below Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	FRI PM	1365	Approaching Capacity
		SAT PM	1076	Below Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	1058	Below Capacity
		SAT PM	916	Below Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	928	Below Capacity
		SAT PM	505	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	FRI PM	1036	Below Capacity
		SAT PM	608	Below Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	FRI PM	726	Below Capacity
		SAT PM	460	Below Capacity

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 3-5:
EXISTING BASELINE
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	AM PEAK		PM PEAK	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	48.9	A	45.4	A
	WB	41.7	B	42.3	A

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 3-6:
EXISTING BASELINE
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	FRIDAY		SATURDAY	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	43.9	A	45.2	A
	WB	42.4	A	42.2	A

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 3-7:
EXISTING BASELINE
TWO-WAY TWO-LANE HIGHWAY SEGMENT ANALYSIS

HIGHWAY SEGMENT	PEAK HOUR	EXISTING BASELINE		
		LOS (a)	Average Travel Speed (mph)	PTSF (b)
SR-94				
Proctor Valley Road to Melody Rd	Weekday AM	**D**	40.5	64.9%
	Weekday PM	**D**	40.5	64.8%
	Friday PM	**D**	40.2	68.7%
	Saturday PM	**D**	41.0	62.7%
Melody Road to Otay Lakes Rd	Weekday AM	**D**	44.4	63.4%
	Weekday PM	**D**	44.4	63.5%
	Friday PM	**D**	44.0	66.0%
	Saturday PM	**D**	45.0	61.1%

Notes:
Bold values indicate intersections operating at LOS D, E or F.
(a) LOS is based on Average Travel Speed and Percent Time Spent Following per Chapter 12 of the 2000 Highway Capacity Manual.
(b) PTSF = Percent Time Spent Following

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4.0 EXISTING BASELINE WITH JIV GAMING PROJECT TRAFFIC CONDITIONS

This section summarizes the results of the analysis for the existing roadway circulation network with the addition of the JIV Gaming Project traffic volumes.

Road Network

Existing Baseline with JIV Gaming Project Traffic Conditions was analyzed with existing roadway network as described in Chapter 3.

Traffic Volumes

Traffic volumes for this scenario include the existing baseline traffic volumes presented in Chapter 3 with the addition of the traffic associated with the JIV Gaming Project. The traffic volumes for the JIV Gaming project were extracted from *Appendix 10 of the Jamul Indian Village Final Tribal Environmental Evaluation*, dated January 2013. **Appendix I** include excerpts from the JIV Environmental Document showing the traffic volumes associated with the JIV Gaming Project.

Figure 4-1 illustrates the existing baseline plus JIV Gaming Project peak-hour traffic volumes at the study intersections for a typical weekday. **Figure 4-2** illustrates existing traffic volumes at the study intersections for typical Friday and Saturday peak-hour periods.

Intersection Analysis (HCM)

Tables 4-1 and 4-2 display the peak-hour LOS analysis results for the study intersections under Existing Baseline Conditions with JIV Gaming Project traffic for all peak-hour periods analyzed. As shown in the tables, several intersections are expected to operate at LOS D or worse for at least one peak-hour period:

- SR 94 (Campo Road) and Jamacha Boulevard (LOS D weekday p.m. peak-hour and Friday p.m. peak-hour);
- SR 94 (Campo Road) and Jamacha Road (LOS D Friday p.m. peak-hour);
- SR 94 (Campo Road) and Steele Canyon Road (LOS D weekday a.m. and p.m. peak-hours, LOS E Friday p.m. peak-hour, and LOS D Saturday p.m. peak-hour);
- SR 94 (Campo Road) and Lyons Valley Road/Indians Spring Drive (LOS F all peak-hour periods);
- SR 94 (Campo Road) and Maxfield Road (LOS E weekday p.m. peak-hour, LOS F Friday p.m. peak-hour, LOS D Saturday p.m. peak-hour);
- SR 94 (Campo Road) and Melody Road/Peaceful Valley Ranch Road (LOS D Weekday p.m. peak-hour, LOS F Friday p.m. peak-hour and LOS E Saturday p.m. peak-hour); and
- SR 94 (Campo Road) and Reservation Road (LOS E weekday a.m. peak-hour, LOS F weekday, Friday and Saturday p.m. peak-hours).

Appendix E contains the intersections LOS calculation worksheets.

SR 94 Improvement Project

1

233 / 111 ⇦ | 94 / 212 ⇨ | **Via Mercado**

⇨ 141 / 154
⇦ 2028 / 1535
SR 94

54 / 201 ⇨
1200 / 2354 ⇨

2

0 / 3 ⇦ | 3 / 3 ⇩ | 3 / 6 ⇨ | **Jamacha Blvd.**

⇨ 13 / 8
⇦ 1870 / 1545
⇨ 449 / 509
SR 94

5 / 2 ⇨
1238 / 2429 ⇨
63 / 135 ⇨

⇨ ⇧ ⇨
203 / 116
5 / 4
540 / 656

3

36 / 59 ⇦ | 9 / 15 ⇩ | 5 / 27 ⇨ | **Dwy.**

⇨ 10 / 21
⇦ 1208 / 1146
⇨ 114 / 121
Jamacha Rd.

71 / 89 ⇨
943 / 1895 ⇨
774 / 1108 ⇨ | **SR 94**

⇨ ⇧ ⇨
1083 / 829
33 / 25
162 / 132

4

356 / 138 ⇦ | 116 / 76 ⇨ | **Cougar Canyon Rd.**

⇨ 277 / 45
⇦ 856 / 724
SR 94

302 / 125 ⇨
578 / 1164 ⇨

5

245 / 96 ⇦ | 130 / 248 ⇨ | **Steele Canyon Rd.**

⇨ 171 / 117
⇦ 881 / 675
⇨ 3 / 5
SR 94

113 / 108 ⇨
592 / 1112 ⇨
0 / 1 ⇨

⇨ ⇧ ⇨
3 / 1
1 / 2
1 / 20

6

353 / 162 ⇦ | 2 / 1 ⇩ | 7 / 8 ⇨ | **Lyons Valley Rd.**

⇨ 3 / 10
⇦ 729 / 608
⇨ 7 / 2
SR 94

163 / 326 ⇨
561 / 972 ⇨
7 / 9 ⇨ | **Indian Springs Dr.**

⇨ ⇧ ⇨
11 / 6
1 / 2
3 / 6

7

67 / 17 ⇦ | 25 / 31 ⇩ | 69 / 71 ⇨ | **Jefferson Rd.**

⇨ 64 / 69
⇦ 556 / 555
⇨ 2 / 3
SR 94

14 / 17 ⇨
505 / 807 ⇨
35 / 114 ⇨ | **Proctor Valley Rd.**

⇨ ⇧ ⇨
117 / 52
33 / 41
5 / 15

8

10 / 52 ⇦ | 516 / 884 ⇩ | **SR 94**

Maxfield Rd.

6 / 33 ⇨
4 / 31 ⇨

⇨ ⇧
6 / 12
602 / 576

9

11 / 8 ⇦ | 478 / 866 ⇩ | 11 / 3 ⇨ | **SR 94**

Melody Rd.

⇨ 1 / 4
Peaceful Valley Ranch Rd.

18 / 10 ⇨
0 / 1 ⇨
11 / 17 ⇨

⇨ ⇧ ⇨
7 / 13
577 / 571
1 / 0

10

344 / 437 ⇦ | 199 / 414 ⇩ | **SR 94**

Reservation Rd.

147 / 387 ⇨
32 / 85 ⇨

⇨ ⇧
76 / 96
410 / 198

11

140 / 430 ⇩ | 18 / 78 ⇨ | **SR 94**

⇨ 71 / 40
⇨ 26 / 13
Honey Springs Rd.

⇧ ⇨
405 / 222
12 / 27

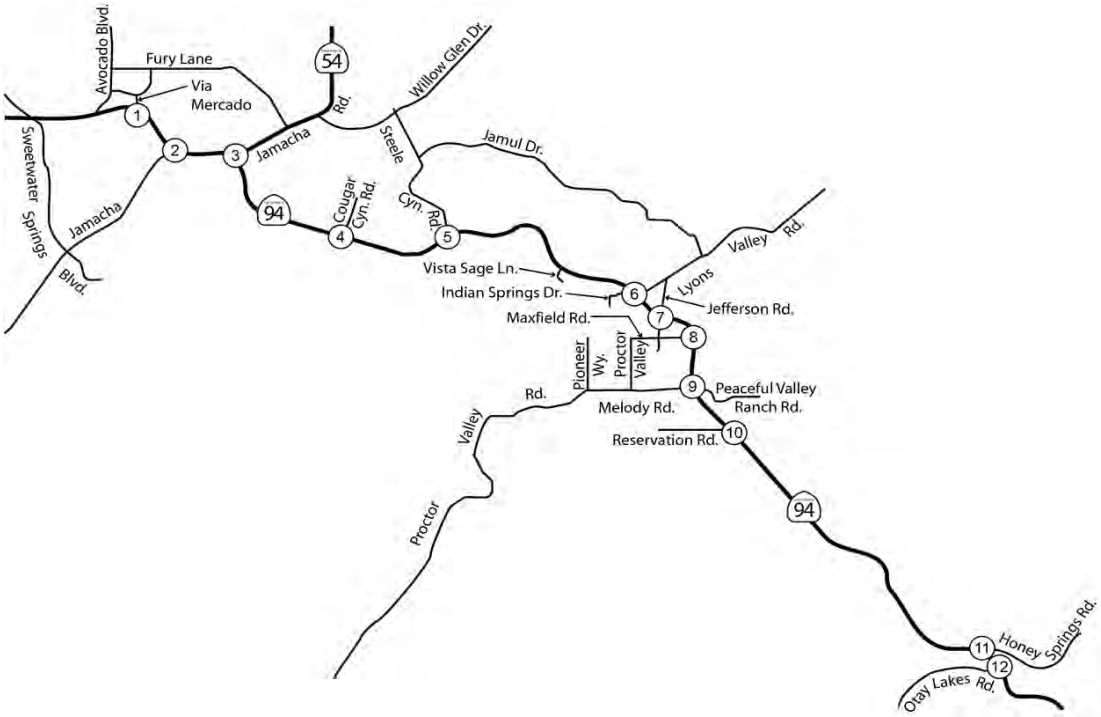
12

101 / 111 ⇦ | 142 / 311 ⇩ | **SR 94**

Otay Lakes Rd.

92 / 139 ⇨
52 / 76 ⇨

⇨ ⇧
68 / 53
299 / 119



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 4-1

Existing Baseline with JIV Gaming Project Peak-Hour Traffic Volumes (Weekday)

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SR 94 Improvement Project

1

157 / 123	205 / 169	Via Mercado
183 / 164	1803 / 1656	SR 94
164 / 96	2290 / 1916	

2

1 / 4	2 / 3	8 / 5
Jamacha Blvd.		
6 / 40	1867 / 1718	583 / 495
SR 94		
5 / 56	2337 / 1913	128 / 112
113 / 87	2 / 9	730 / 558

3

79 / 62	32 / 19	29 / 19
SR 94		Dwy.
25 / 15	1224 / 1087	143 / 114
Jamacha Rd.		
113 / 80	1738 / 1423	1240 / 972
1146 / 1136	26 / 32	150 / 122

4

109 / 5	67 / 1	Cougar Canyon Rd.
46 / 3	924 / 929	SR 94
84 / 4	1287 / 926	

5

103 / 67	5 / 2	275 / 172
Steele Canyon Rd.		
159 / 145	842 / 911	5 / 2
SR 94		
106 / 57	1209 / 888	1 / 0
1 / 1	3 / 2	18 / 7

6

189 / 187	1 / 0	9 / 6
Lyons Valley Rd.		
11 / 13	836 / 872	3 / 4
SR 94		
331 / 183	1118 / 877	14 / 7
6 / 6	1 / 0	3 / 4

7

21 / 18	25 / 21	92 / 63
Jefferson Rd.		
71 / 64	757 / 817	3 / 2
SR 94		
27 / 17	950 / 759	121 / 89
69 / 57	38 / 20	22 / 10

8

28 / 13	1017 / 866	SR 94
Maxfield Rd.		
19 / 9	27 / 14	
4 / 6	809 / 767	

9

12 / 14	1029 / 796	2 / 2
Melody Rd.		SR 94
4 / 4	1 / 0	
Peaceful Valley Ranch Rd.		
11 / 9	16 / 16	
20 / 16	816 / 846	

10

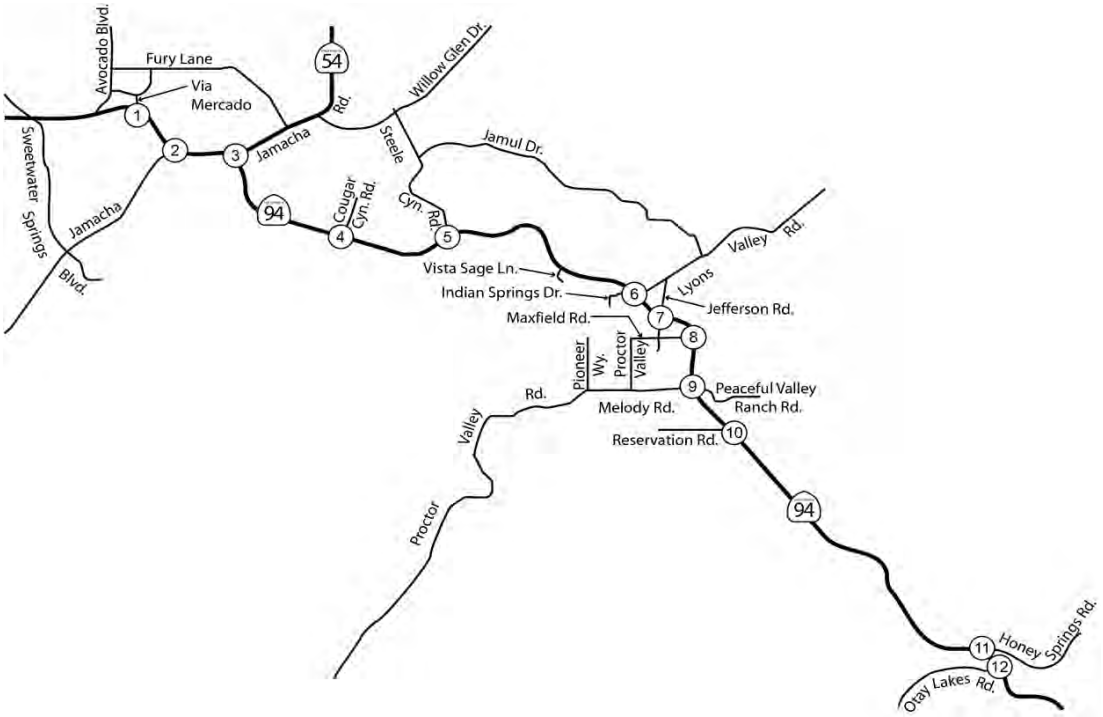
529 / 531	499 / 289	SR 94
Reservation Rd.		
620 / 620	136 / 140	
116 / 117	186 / 218	

11

487 / 353	71 / 47	SR 94
33 / 43	14 / 15	
Honey Springs Rd.		
317 / 274	22 / 17	

12

171 / 154	380 / 204	SR 94
Otay Lakes Rd.		
142 / 133	95 / 49	
42 / 39	110 / 140	



Legend

X / Y = FRI / SAT PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 4-2

Existing Baseline with JIV Gaming Project Peak-Hour Traffic Volumes (Friday/Saturday)

Intersection Analysis (ILV)

Tables 4-3 and 4-4 display the ILV analysis results for the Caltrans-owned signalized intersections under Existing Baseline with JIV Gaming Project Traffic Conditions for all peak-hours analyzed. As shown in the table, all intersections along SR 94 (Campo Road) would operate at below capacity during all peak periods, except for the following intersections, which operate at approaching capacity:

- SR 94 (Campo Road) & Via Mercado (weekday a.m. and p.m. peak-hours, Friday p.m. peak-hour);
- SR 94 (Campo Road) & Jamacha Boulevard (weekday p.m. peak-hour; Saturday p.m. peak-hour);
- SR 94 (Campo Road) & Jamacha Road (weekday p.m. peak-hour and Friday p.m. peak-hour);
- SR 94 (Campo Road) & Cougar Canyon (weekday a.m. and p.m. peak-hours, Friday p.m. peak-hour);
- SR 94 (Campo Road) & Steele Canyon (weekday a.m. and p.m. peak-hours); and
- SR 94 (Campo Road) & Jefferson Road (Friday p.m. peak-hour)

In addition, the following two intersections have peak-hour periods were the intersection operates at above capacity levels:

- SR 94 (Campo Road) & Jamacha Boulevard (Friday p.m. peak-hour); and
- SR 94 (Campo Road) & Steele Canyon (Friday p.m. peak-hours).

Appendix F contains the ILV worksheets.

TABLE 4-1:
EXISTING BASELINE WITH JIV GAMING PROJECT
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	EXISTING WITH JIV GAMING PROJECT	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	AM	22.5	C
			PM	27.9	C
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	AM	16.2	B
			PM	37.2	**D**
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	AM	25.0	C
			PM	30.9	C
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	AM	19.5	B
			PM	15.0	B
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	AM	37.9	**D**
			PM	42.0	**D**
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	AM	ECL	**F**
			PM	659.0	**F**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	AM	13.3	B
			PM	13.6	B
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	AM	19.5	C
			PM	45.3	**E**
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	AM	24.1	C
			PM	34.6	**D**
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	AM	45.4	**E**
			PM	645.3	**F**
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	AM	13.1	B
			PM	12.3	B
12	SR 94 (Campo Rd) & Otay Lakes Rd.	One-Way Stop	AM	14.5	B
			PM	16.0	C

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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TABLE 4-2:
EXISTING BASELINE WITH JIV GAMING PROJECT
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	EXISTING WITH JIV GAMING PROJECT	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	FRI PM	34.7	C
			SAT PM	18.0	B
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	FRI PM	40.6	**D**
			SAT PM	20.0	C
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	FRI PM	54.0	**D**
			SAT PM	32.3	C
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	FRI PM	16.3	B
			SAT PM	20.4	C
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	FRI PM	56.7	**E**
			SAT PM	42.5	**D**
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	FRI PM	ECL	**F**
			SAT PM	972.2	**F**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	FRI PM	17.2	B
			SAT PM	21.9	C
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	FRI PM	58.9	**F**
			SAT PM	32.3	**D**
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	FRI PM	77.8	**F**
			SAT PM	42.8	**E**
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	FRI PM	ECL	**F**
			SAT PM	ECL	**F**
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	FRI PM	14.2	B
			SAT PM	12.2	B
12	SR 94 (Campo Rd) & Otay Lakes Rd.	One-Way Stop	FRI PM	17.7	C
			SAT PM	14.2	B

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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TABLE 4-3:
EXISTING BASELINE WITH JIV GAMING PROJECT
ILV ANALYSIS (WEEKDAY)

INTERSECTION		PEAK HOUR	EXISTING PLUS JIV GAMING PROJECT	
			ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	1303	Approaching Capacity
		PM	1389	Approaching Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	960	Below Capacity
		PM	1466	Approaching Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1052	Below Capacity
		PM	1228	Approaching Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1230	Approaching Capacity
		PM	1292	Approaching Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1244	Approaching Capacity
		PM	1389	Approaching Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	AM	795	Below Capacity
		PM	1060	Below Capacity

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 4-4:
EXISTING BASELINE WITH JIV GAMING PROJECT
ILV ANALYSIS (FRIDAY/SATURDAY)

INTERSECTION		PEAK HOUR	EXISTING PLUS JIV GAMING PROJECT	
			ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	1362	Approaching Capacity
		SAT PM	1175	Below Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	FRI PM	1517	**Above Capacity**
		SAT PM	1228	Approaching Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	1391	Approaching Capacity
		SAT PM	1162	Below Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	1354	Approaching Capacity
		SAT PM	934	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	FRI PM	1517	**Above Capacity**
		SAT PM	1152	Below Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	FRI PM	1212	Approaching Capacity
		SAT PM	1000	Below Capacity

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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HCM Peak-Hour Arterial Analysis

Tables 4-5 and 4-6 display the peak-hour arterial analysis along SR 94 (Campo Road) between Via Mercado and Jefferson Road/Proctor Valley Road under Existing Baseline with JIV Gaming Project Traffic Conditions. As shown in the table, the roadway segments would operate at LOS B or better with the addition of the JIV Gaming Project traffic during the peak-hours evaluated.

Appendix G contains the peak-hour arterial analysis worksheets.

HCM Peak-Hour Two-Lane Highway Analysis

Table 4-7 displays the peak-hour two-lane highway analysis along SR 94 (Campo Road) between Jefferson Road/Proctor Valley Road and Otay Lakes Road under Existing Baseline with JIV Gaming Project Traffic Conditions. The table shows the results of the weekday and weekend conditions. The segment between Proctor Valley Road and Reservation Road is expected to operate at LOS E during all peak-hour analyzed with the exception of the Wednesday a.m. peak-hour. During the Wednesday a.m peak-hour period, the segment of Melody Road to Reservation Road is expected to operate at LOS D. The segment between Reservation Road and Otay Lakes Road is expected to operate at LOS D during all peak-hour periods analyzed.

Appendix H contains the two-way two-lane analysis worksheets.

TABLE 4-5:
EXISTING BASELINE WITH JIV GAMING PROJECT
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	AM PEAK		PM PEAK	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	47.7	A	41.5	B
	WB	38.3	B	41.6	B

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 4-6:
EXISTING BASELINE WITH JIV GAMING PROJECT
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	FRIDAY		SATURDAY	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	37.9	B	43.7	A
	WB	39.4	B	38.8	B

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 4-7:
EXISTING BASELINE WITH JIV GAMING PROJECT
TWO-WAY TWO-LANE HIGHWAY SEGMENT ANALYSIS

HIGHWAY SEGMENT	PEAK HOUR	EXISTING BASELINE		
		LOS (a)	Average Travel Speed (mph)	PTSF (b)
SR-94				
Proctor Valley Road to Melody Rd	Weekday AM	**E**	37.2	78.5%
	Weekday PM	**E**	34.5	84.8%
	Friday PM	**E**	31.1	89.6%
	Saturday PM	**E**	32.6	87.7%
Melody Rd to Reservation Rd	Weekday AM	**D**	41.2	76.8%
	Weekday PM	**E**	38.1	84.1%
	Friday PM	**E**	34.1	89.5%
	Saturday PM	**E**	36.0	87.2%
Reservation Rd to Otay Lakes Rd	Weekday AM	**D**	43.7	67.0%
	Weekday PM	**D**	44.4	63.5%
	Friday PM	**D**	42.5	74.4%
	Saturday PM	**D**	43.2	69.4%

Notes:
Bold values indicate intersections operating at LOS D, E or F.
(a) LOS is based on Average Travel Speed and Percent Time Spent Following per Chapter 12 of the 2000 Highway Capacity Manual.
(b) PTSF = Percent Time Spent Following

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5.0 EXISTING WITH JIV GAMING PROJECT TRAFFIC WITH PROJECT CONDITIONS

This section summarizes the operations of the existing roadway circulation network with the addition of the Proposed Project roadway improvements. This scenario also includes the traffic from the JIV Gaming Project.

Road Network

The roadway network for this analysis includes the roadway improvements to be constructed by the Proposed Project as described in Chapter 1.

Traffic Volumes

Traffic volumes for this scenario are equal to the traffic volumes for the Existing Baseline with JIV Gaming Project Traffic conditions. It is assumed that with the exception of Alternative 3 project scenario, the Proposed Project will not change the traffic volumes and patterns along the study area. For Alternative 3 proposed improvements, however, the traffic volumes associated with the JIV Gaming facility will enter SR 94 (Campo Road) via Melody Road. For this reason, peak-hour volumes at the SR 94 (Campo Road)/Melody Road/Peaceful Valley Ranch Road and the SR 94 (Campo Road)/Reservation Road intersections were adjusted. The adjustment of traffic volumes was done so all traffic related to the JIV Gaming Project would turn to and from Melody Road instead of a driveway at Daisy Drive or Reservation Road.

Figure 5-1 illustrates the existing peak-hour traffic volumes at the study intersections for a typical weekday. **Figure 5-2** illustrates existing traffic volumes at the study intersections for a typical Friday and Saturday peak-hour periods. **Figure 5-3** illustrates the peak-hour traffic volume adjustment needed for the evaluation of the Alternative 3 project scenario, where the JIV Gaming Project related traffic uses Melody Road to access the SR 94.

Intersection Analysis (HCM)

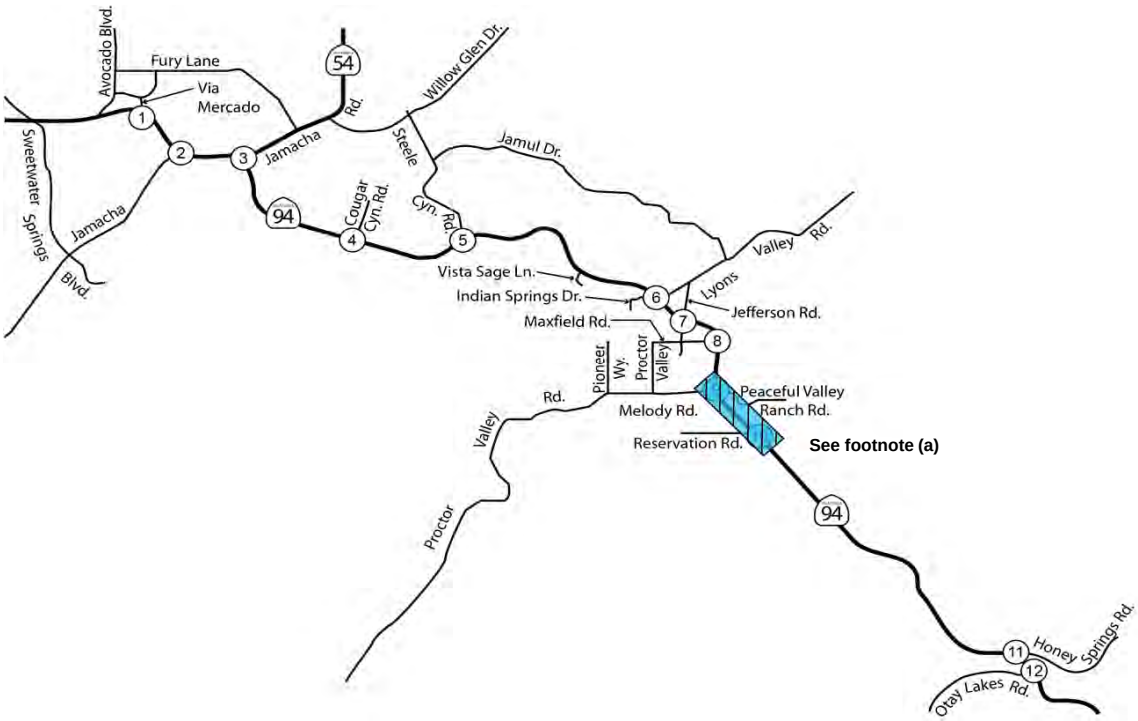
Tables 5-1 and 5-2 display the peak-hour LOS analysis results for the study intersections under Existing with JIV Gaming Project traffic with Project Alternatives 1-2 conditions for all peak-hour scenarios analyzed. As shown in the tables, with the implementation of the Proposed Project improvements, every intersection within the study area will operate at LOS C or better with the exception of SR 94 & Jamacha Road (LOS D) during the Friday PM peak hour period. All intersections were also found to operate at equal or less delay than the before project conditions except Jamacha Boulevard & SR 94 (LOS B) during the AM peak hour period.

Table 5-3 and 5-4 displays the peak-hour LOS analysis results for the study intersection under the Existing with JIV Gaming Project with Project Alternative 3 conditions for all peak-hour scenarios analysis. As with the Alternative 1-2 project conditions, with the implementation of the Proposed Project improvements, every intersection within the study area will operate at LOS C or better with the exception of SR 94 & Jamacha Road (LOS D) during the Friday PM peak hour period. All intersections were also found to operate at equal or less delay than the before project conditions except Jamacha Boulevard & SR 94 (LOS B) during the AM peak hour period.

Appendix E contains the intersections LOS calculation worksheets.

SR 94 Improvement Project

1	⇗ 233 / 111 ⇖ 94 / 212 **Via Mercado**	⇗ 141 / 154 ⇦ 2028 / 1535 **SR 94**	
	54 / 201 1200 / 2354 ⇗ ⇨		
2	⇗ 0 / 3 ⇩ 3 / 3 ⇖ 3 / 6 **Jamacha Blvd.**	⇗ 13 / 8 ⇦ 1870 / 1545 ⇖ 449 / 509 **SR 94**	
	5 / 2 1238 / 2429 63 / 135 ⇗ ⇨ ⇖	⇖ ⇧ ⇗ 203 / 116 5 / 4 540 / 656	
3	⇗ 36 / 59 ⇩ 9 / 15 ⇖ 5 / 27 **Dwy.** **SR 94**	⇗ 10 / 21 ⇦ 1208 / 1146 ⇖ 114 / 121 **Jamacha Rd.**	
	71 / 89 943 / 1895 774 / 1108 ⇗ ⇨ ⇖ **SR 94**	⇖ ⇧ ⇗ 1083 / 829 33 / 25 162 / 132	
4	⇗ 356 / 138 ⇖ 116 / 76 **Cougar Canyon Rd.**	⇗ 277 / 45 ⇦ 856 / 724 **SR 94**	
	302 / 125 578 / 1164 ⇗ ⇨		
5	⇗ 245 / 96 ⇖ 130 / 248 **Steele Canyon Rd.**	⇗ 171 / 117 ⇦ 881 / 675 ⇖ 3 / 5 **SR 94**	
	113 / 108 592 / 1112 0 / 1 ⇗ ⇨ ⇖	⇖ ⇧ ⇗ 3 / 1 1 / 2 1 / 20	
6	⇗ 353 / 162 ⇩ 2 / 1 ⇖ 7 / 8 **Lyons Valley Rd.**	⇗ 3 / 10 ⇦ 729 / 608 ⇖ 7 / 2 **SR 94**	
	163 / 326 561 / 972 7 / 9 ⇗ ⇨ ⇖ **Indian Springs Dr.**	⇖ ⇧ ⇗ 11 / 6 1 / 2 3 / 6	
7	⇗ 67 / 17 ⇩ 25 / 31 ⇖ 69 / 71 **Jefferson Rd.**	⇗ 64 / 69 ⇦ 556 / 555 ⇖ 2 / 3 **SR 94**	
	14 / 17 505 / 807 35 / 114 ⇗ ⇨ ⇖ **Proctor Valley Rd.**	⇖ ⇧ ⇗ 117 / 52 33 / 41 5 / 15	
8	⇗ 10 / 52 ⇩ 516 / 884 **SR 94** **Maxfield Rd.**		
	6 / 33 4 / 31 ⇗ ⇖	⇖ ⇧ 6 / 12 602 / 576	
9	⇗ 11 / 8 ⇩ 478 / 866 ⇖ 11 / 3 **SR 94** **Melody Rd.**	⇗ 1 / 4 **Peaceful Valley Ranch Rd.**	
	18 / 10 0 / 1 11 / 17 ⇗ ⇨ ⇖	⇖ ⇧ ⇗ 7 / 13 577 / 571 1 / 0	
10	⇗ 344 / 437 ⇩ 199 / 414 **SR 94** **Reservation Rd or Daisy Dr**		
	147 / 387 32 / 85 ⇗ ⇖	⇖ ⇧ 76 / 96 410 / 198	
11	⇩ 140 / 430 ⇖ 18 / 78 **SR 94**	⇗ 71 / 40 ⇖ 26 / 13 **Honey Springs Rd.**	
		⇧ ⇗ 405 / 222 12 / 27	
12	⇗ 101 / 111 ⇩ 142 / 311 **SR 94** **Otay Lakes Rd.**		
	92 / 139 52 / 76 ⇗ ⇖	⇖ ⇧ 68 / 53 299 / 119	



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

(a) Volumes for Alternative 1 and 2 would remain the same. Please refer to Figure 5-3 for Alternative 3 traffic volumes.

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FIGURE 5-1

Existing with JIV Gaming Project with Project (Alt 1-2) Peak-Hour Traffic Volumes (Weekday)

SR 94 Improvement Project

1

157 / 123	205 / 169	Via Mercado
183 / 164	1803 / 1656	SR 94
164 / 96	2290 / 1916	

2

1 / 4	2 / 3	8 / 5
Jamacha Blvd.		
6 / 40	1867 / 1718	583 / 495
SR 94		
5 / 56	2337 / 1913	128 / 112
113 / 87	2 / 9	730 / 558

3

79 / 62	32 / 19	29 / 19
SR 94		Dwy.
25 / 15	1224 / 1087	143 / 114
Jamacha Rd.		
113 / 80	1738 / 1423	1240 / 972
SR 94		
1146 / 1136	26 / 32	150 / 122

4

109 / 5	67 / 1	Cougar Canyon Rd.
46 / 3	924 / 929	SR 94
84 / 4	1287 / 926	

5

103 / 67	5 / 2	275 / 172
Steele Canyon Rd.		
159 / 145	842 / 911	5 / 2
SR 94		
106 / 57	1209 / 888	1 / 0
1 / 1	3 / 2	18 / 7

6

189 / 187	1 / 0	9 / 6
Lyons Valley Rd.		
11 / 13	836 / 872	3 / 4
SR 94		
331 / 183	1118 / 877	14 / 7
6 / 6	1 / 0	3 / 4

7

21 / 18	25 / 21	92 / 63
Jefferson Rd.		
71 / 64	757 / 817	3 / 2
SR 94		
27 / 17	950 / 759	121 / 89
69 / 57	38 / 20	22 / 10

8

28 / 13	1017 / 866	SR 94
Maxfield Rd.		
19 / 9	27 / 14	
4 / 6	809 / 767	

9

12 / 14	1029 / 796	2 / 2
SR 94		
4 / 4	1 / 0	
Melody Rd.		Peaceful Valley Ranch Rd.
11 / 9	16 / 16	
20 / 16	816 / 846	

10

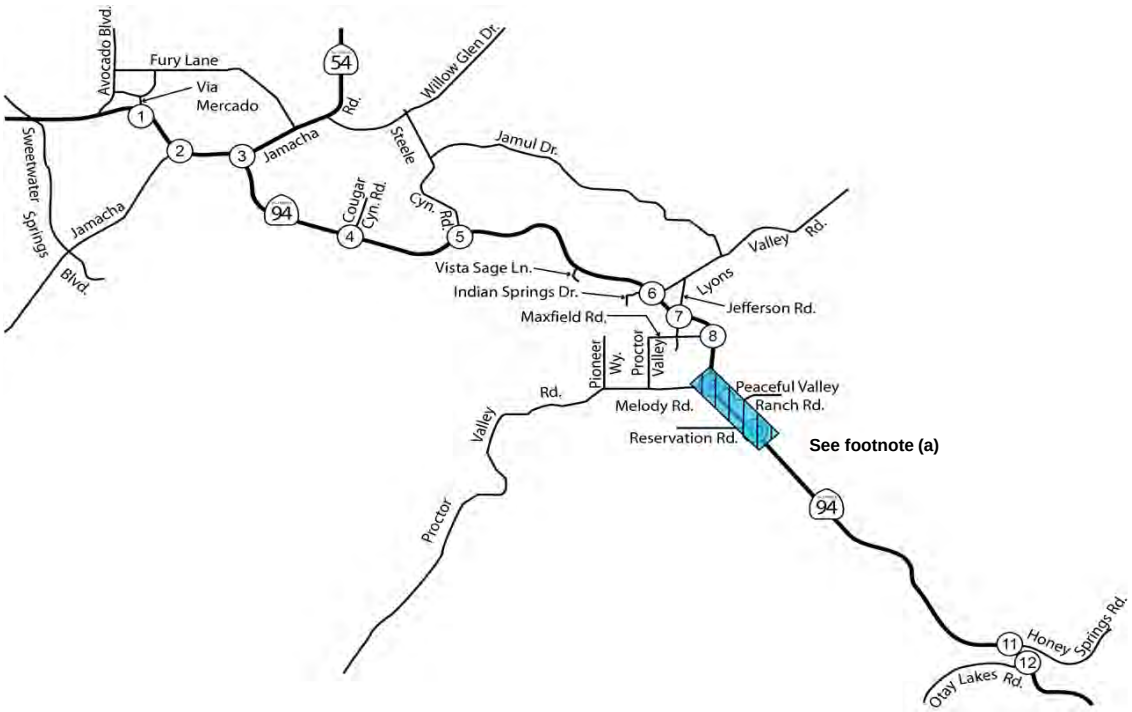
529 / 531	499 / 289	SR 94
Reservation Rd.		
620 / 620	136 / 140	
116 / 117	186 / 218	

11

487 / 353	71 / 47	SR 94
33 / 43	14 / 15	
Honey Springs Rd.		
317 / 274	22 / 17	

12

171 / 154	380 / 204	SR 94
Otay Lakes Rd.		
142 / 133	95 / 49	
42 / 39	110 / 140	



Legend

X / Y = FRI / SAT PEAK HOUR TURNING VOLUMES

NOT TO SCALE

(a) Volumes for Alternative 1 and 2 would remain the same. Please refer to Figure 5-3 for Alternative 3 traffic volumes.

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FIGURE 5-2

Existing with JIV Gaming Project with Project (Alt 1-2) Peak-Hour Traffic Volumes (Friday/Saturday)

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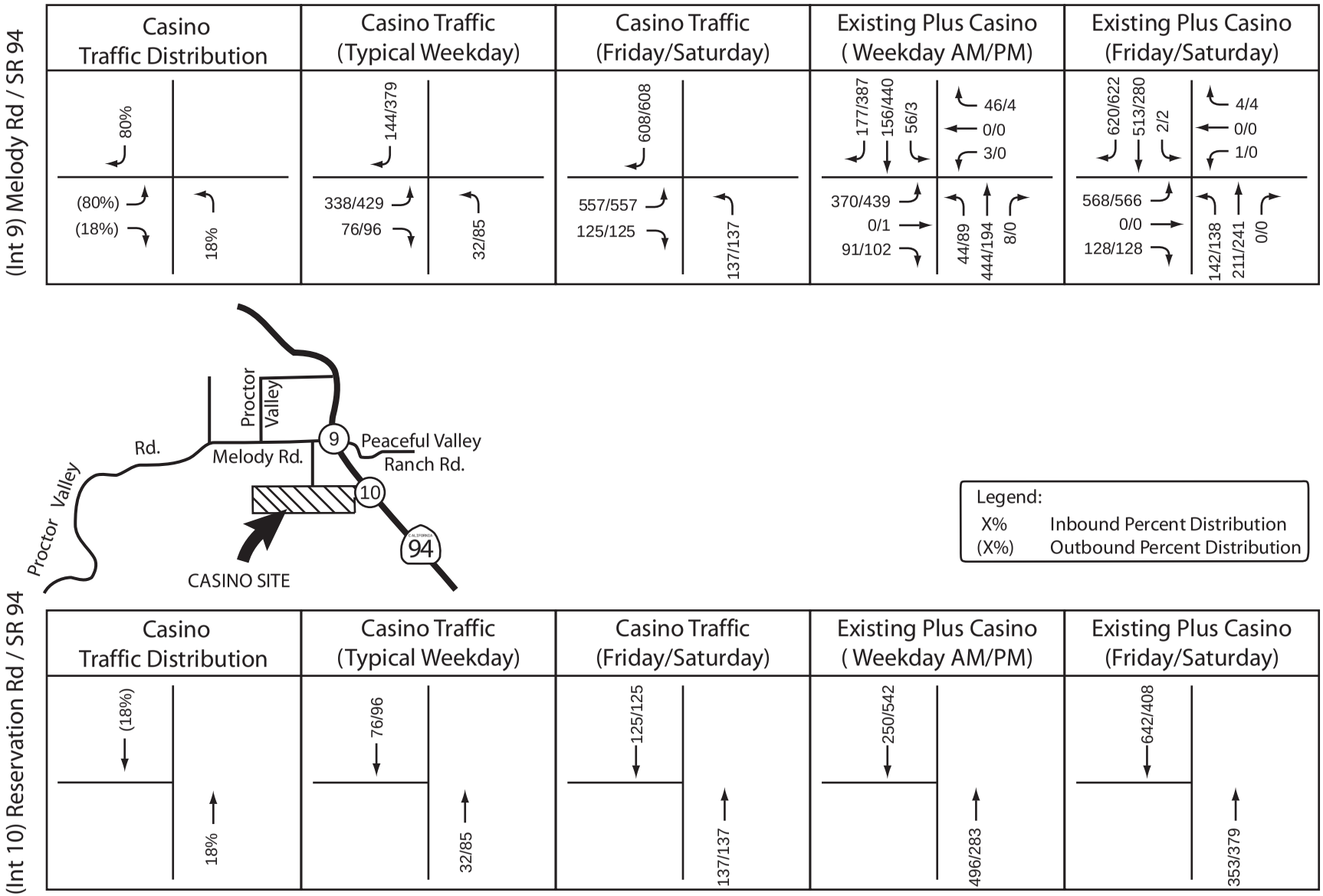

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FIGURE 5-3

Existing with JIV Gaming Project with Project (Alt 3) Peak-Hour Volume Adjustments

TABLE 5-1:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-2)
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

	INTERSECTION	PEAK HOUR	EXISTING WITH JIV GAMING PROJECT		EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-2)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	AM	22.5	C	22.5	C	0.0	NO
		PM	27.9	C	27.9	C	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	AM	16.2	B	18.0	B	1.8	NO
		PM	37.2	**D**	28.9	C	-8.3	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	25.0	C	24.7	C	-0.3	NO
		PM	30.9	C	28.5	C	-2.4	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	19.5	B	19.5	B	0.0	NO
		PM	15.0	B	15.0	B	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	AM	37.9	**D**	19.0	B	-18.9	NO
		PM	42.0	**D**	22.4	C	-19.6	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	AM	ECL	**F**	12.0	B	-	NO
		PM	659.0	**F**	8.3	A	-650.7	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	AM	13.3	B	13.3	B	0.0	NO
		PM	13.6	B	13.6	B	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	AM	19.5	C	13.2	B	-6.3	NO
		PM	45.3	**E**	20.5	C	-24.8	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	AM	24.1	C	4.8	A	-19.3	NO
		PM	34.6	C	6.2	A	-28.4	NO
10	SR 94 (Campo Rd) & Reservation Rd.	AM	45.4	**D**	4.8	A	-40.6	NO
		PM	645.3	**F**	7.0	A	-638.3	NO
11	SR 94 (Campo Rd) & Honey Springs Rd.	AM	13.1	B	13.1	B	0.0	NO
		PM	12.3	B	12.3	B	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	AM	14.5	B	14.5	B	0.0	NO
		PM	16.0	C	16.0	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 5-2:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-2)
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

	INTERSECTION	PEAK HOUR	EXISTING WITH JIV GAMING PROJECT		EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-2)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	34.7	C	34.7	C	0.0	NO
		SAT PM	18.0	B	18.0	B	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	FRI PM	40.6	**D**	28.9	C	-11.7	NO
		SAT PM	20.0	C	19.8	B	-0.2	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	54.0	**D**	46.1	**D**	-7.9	NO
		SAT PM	32.3	C	31.2	C	-1.1	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	16.3	B	16.3	B	0.0	NO
		SAT PM	20.4	C	20.4	C	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	FRI PM	56.7	**E**	24.4	C	-32.3	NO
		SAT PM	42.5	**D**	22.9	C	-19.6	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	FRI PM	ECL	**F**	10.1	B	-	NO
		SAT PM	972.2	**F**	8.2	A	-964.0	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	FRI PM	17.2	B	17.2	B	0.0	NO
		SAT PM	21.9	C	21.9	C	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	FRI PM	58.9	**F**	23.0	C	-35.9	NO
		SAT PM	32.3	**D**	17.9	C	-14.4	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	FRI PM	77.8	**E**	6.8	A	-71.0	NO
		SAT PM	42.8	**D**	6.8	A	-36.0	NO
10	SR 94 (Campo Rd) & Reservation Rd.	FRI PM	ECL	**F**	9.0	A	-	NO
		SAT PM	ECL	**F**	7.7	A	-	NO
11	SR 94 (Campo Rd) & Honey Springs Rd.	FRI PM	14.2	B	14.2	B	0.0	NO
		SAT PM	12.2	B	12.2	B	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	FRI PM	17.7	C	17.7	C	0.0	NO
		SAT PM	14.2	B	14.2	B	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 5-3:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 3)
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

	INTERSECTION	PEAK HOUR	EXISTING WITH JIV GAMING PROJECT		EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 3)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	AM	22.5	C	22.5	C	0.0	NO
		PM	27.9	C	27.9	C	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	AM	16.2	B	18.0	B	1.8	NO
		PM	37.2	**D**	28.9	C	-8.3	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	25.0	C	24.7	C	-0.3	NO
		PM	30.9	C	28.5	C	-2.4	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	19.5	B	19.5	B	0.0	NO
		PM	15.0	B	15.0	B	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	AM	37.9	**D**	19.0	B	-18.9	NO
		PM	42.0	**D**	22.4	C	-19.6	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	AM	ECL	**F**	12.0	B	-	NO
		PM	659.0	**F**	8.3	A	-650.7	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	AM	13.3	B	13.3	B	0.0	NO
		PM	13.6	B	13.6	B	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	AM	19.5	C	13.2	B	-6.3	NO
		PM	45.3	**E**	20.5	C	-24.8	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	AM	24.1	C	18.3	B	-5.8	NO
		PM	34.6	C	19.4	B	-15.2	NO
10	SR 94 (Campo Rd) & Reservation Rd.	AM	45.4	**E**	This intersection does not exist under this scenario.			
		PM	645.3	**F**				
11	SR 94 (Campo Rd) & Honey Springs Rd.	AM	13.1	B	13.1	B	0.0	NO
		PM	12.3	B	12.3	B	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	AM	14.5	B	14.5	B	0.0	NO
		PM	16.0	C	16.0	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 5-4:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 3)
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

	INTERSECTION	PEAK HOUR	EXISTING WITH JIV GAMING PROJECT		EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 3)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	34.7	C	34.7	C	0.0	NO
		SAT PM	18.0	B	18.0	B	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	FRI PM	40.6	**D**	28.9	C	-11.7	NO
		SAT PM	20.0	C	19.8	B	-0.2	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	54.0	**D**	46.1	**D**	-7.9	NO
		SAT PM	32.3	C	31.2	C	-1.1	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	16.3	B	16.3	B	0.0	NO
		SAT PM	20.4	C	20.4	C	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	FRI PM	56.7	**E**	24.4	C	-32.3	NO
		SAT PM	42.5	**D**	22.9	C	-19.6	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	FRI PM	ECL	**F**	10.1	B	-	NO
		SAT PM	972.2	**F**	8.2	A	-964.0	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	FRI PM	17.2	B	17.2	B	0.0	NO
		SAT PM	21.9	C	21.9	C	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	FRI PM	58.9	**F**	23.0	C	-35.9	NO
		SAT PM	32.3	**D**	17.9	C	-14.4	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	FRI PM	77.8	**E**	26.3	C	-51.5	NO
		SAT PM	42.8	**D**	18.4	B	-24.4	NO
10	SR 94 (Campo Rd) & Reservation Rd.	FRI PM	ECL	**F**	This intersection does not exist under this scenario.			
		SAT PM	ECL	**F**				
11	SR 94 (Campo Rd) & Honey Springs Rd.	FRI PM	14.2	B	14.2	B	0.0	NO
		SAT PM	12.2	B	12.2	B	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	FRI PM	17.7	C	17.7	C	0.0	NO
		SAT PM	14.2	B	14.2	B	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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Intersection Analysis (ILV)

Tables 5-5 and 5-6 display the ILV analysis results for the Caltrans-owned signalized intersections under Existing Baseline with JIV Gaming Project Traffic and Proposed Project Conditions for all peak-hours analyzed. As shown in the table, all intersections along SR 94 (Campo Road) would operate at equal or better conditions than before project conditions.

HCM Peak-Hour Arterial Analysis

Tables 5-7 to 5-8 display the peak-hour arterial analysis along SR 94 (Campo Road) between Via Mercado and Jefferson Road/Proctor Valley Road under Existing Baseline with JIV Gaming Project Traffic and Proposed Project Conditions. As shown in the table, SR 94 between Via Mercado and Jefferson Road/Proctor Valley Road will continue to operate at LOS B or better after the construction of the proposed improvements.

Appendix G contains the peak-hour arterial analysis worksheets.

HCM Peak-Hour Two-Lane Highway Analysis

With the completion of the Proposed Project, new traffic signals will be installed at the following intersections:

- SR 94 (Campo Road) and Lyons Valley Road;
- SR 94 (Campo Road) and Melody Road; and
- SR 94 (Campo Road) and Reservation Road or Daisy Drive (Alternatives 1 and 2 only).

The installation of traffic signals at these locations will change the characteristics of the roadway operations between Proctor Valley Road and Otay Lakes Road making the HCM peak-hour two-lane highway analysis no longer applicable. With the installation of the traffic signals, this segment would operate as an arterial since traffic signals will be located within a 2 mile distance from each other. **Tables 5-9 and 5-10** show the results of the HCM Peak-Hour Arterial Analysis for the segment between Via Mercado and Melody Road. As shown in the Table, the results of the analysis show that the SR 94 will continue to operate at LOS B or better.

TABLE 5-5:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT
ILV ANALYSIS (WEEKDAY)

INTERSECTION		PEAK HOUR	EXISTING PLUS JIV GAMING PROJECT		EXISTING PLUS JIV GAMING PROJECT PLUS PROPOSED PROJECT ALTERNATIVES 1 - 2		EXISTING PLUS JIV GAMING PROJECT PLUS PROPOSED PROJECT ALTERNATIVE 3	
			ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	1303	Approaching Capacity	1303	Approaching Capacity	1303	Approaching Capacity
		PM	1389	Approaching Capacity	1389	Approaching Capacity	1389	Approaching Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	960	Below Capacity	850	Below Capacity	850	Below Capacity
		PM	1466	Approaching Capacity	1184	Below Capacity	1184	Below Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1052	Below Capacity	1052	Below Capacity	1052	Below Capacity
		PM	1228	Approaching Capacity	1167	Below Capacity	1167	Below Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1230	Approaching Capacity	1230	Approaching Capacity	1230	Approaching Capacity
		PM	1292	Approaching Capacity	1292	Approaching Capacity	1292	Approaching Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1244	Approaching Capacity	889	Below Capacity	889	Below Capacity
		PM	1389	Approaching Capacity	833	Below Capacity	833	Below Capacity
6	SR 94 (Campo Rd) & Lyons Valley Rd	AM	This intersection won't be signalized under this scenario		1248	Approaching Capacity	1248	Approaching Capacity
		PM			1145	Below Capacity	1145	Below Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	AM	795	Below Capacity	795	Below Capacity	795	Below Capacity
		PM	1060	Below Capacity	1060	Below Capacity	1060	Below Capacity
9	SR 94 (Campo Rd) & Melody Rd	AM	This intersection won't be signalized under this scenario		628	Below Capacity	742	Below Capacity
		PM			915	Below Capacity	709	Below Capacity
10	SR 94 (Campo Rd) & Reservation Rd or Daisy Drive	AM	This intersection won't be signalized under this scenario		494	Below Capacity	This intersection won't be signalized under this scenario	
		PM			727	Below Capacity		

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 5-6:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT
ILV ANALYSIS (FRIDAY/SATURDAY)

INTERSECTION		PEAK HOUR	EXISTING PLUS JIV GAMING PROJECT		EXISTING PLUS JIV GAMING PROJECT PLUS PROPOSED PROJECT ALTERNATIVES 1 - 2		EXISTING PLUS JIV GAMING PROJECT PLUS PROPOSED PROJECT ALTERNATIVE 3	
			ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	1362	Approaching Capacity	1362	Approaching Capacity	1362	Approaching Capacity
		PM	1175	Below Capacity	1175	Below Capacity	1175	Below Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	1517	**Above Capacity**	1191	Below Capacity	1191	Below Capacity
		PM	1228	Approaching Capacity	986	Below Capacity	986	Below Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1391	Approaching Capacity	1304	Approaching Capacity	1304	Approaching Capacity
		PM	1162	Below Capacity	1162	Below Capacity	1162	Below Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1354	Approaching Capacity	1354	Approaching Capacity	1354	Approaching Capacity
		PM	934	Below Capacity	934	Below Capacity	934	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1517	**Above Capacity**	912	Below Capacity	912	Below Capacity
		PM	1152	Below Capacity	769	Below Capacity	769	Below Capacity
6	SR 94 (Campo Rd) & Lyons Valley Rd	AM	This intersection won't be signalized under this scenario		1367	Approaching Capacity	1367	Approaching Capacity
		PM			1255	Approaching Capacity	1255	Approaching Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	AM	1212	Approaching Capacity	1212	Approaching Capacity	1212	Approaching Capacity
		PM	1000	Below Capacity	1000	Below Capacity	1000	Below Capacity
9	SR 94 (Campo Rd) & Melody Rd	AM	This intersection won't be signalized under this scenario		1088	Below Capacity	812	Below Capacity
		PM			887	Below Capacity	915	Below Capacity
10	SR 94 (Campo Rd) & Reservation Rd or Daisy Drive	AM	This intersection won't be signalized under this scenario		955	Below Capacity	This intersection won't be signalized under this scenario	
		PM			958	Below Capacity		

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 5-7:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	EXISTING PLUS JIV GAMING PROJECT		EXISTING PLUS JIV GAMING PROJECT PLUS PROPOSED PROJECT			
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)	Δ	SIGNIFICANT?
AM PEAK							
SR 94							
Via Mercado to Proctor Valley Rd	EB	47.7	A	46.2	A	-1.5	NO
	WB	38.3	B	40.0	B	1.7	NO
PM PEAK							
SR 94							
Via Mercado to Proctor Valley Rd	EB	41.5	B	42.6	A	1.1	NO
	WB	41.6	B	40.3	B	-1.3	NO

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 5-8:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	EXISTING PLUS CJIV GAMING PROJECT		EXISTING PLUS JIV GAMING PROJECT PLUS PROPOSED PROJECT			
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)	Δ	SIGNIFICANT?
FRIDAY PM							
SR 94							
Via Mercado to Proctor Valley Rd	EB	39.2	B	41.8	B	2.6	NO
	WB	44.9	A	38.5	B	-6.4	NO
SATURDAY PM							
SR 94							
Via Mercado to Proctor Valley Rd	EB	44.8	A	43.7	A	-1.1	NO
	WB	44.0	A	39.7	B	-4.3	NO

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 5-9:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS TO MELODY RD (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	AM PEAK		PM PEAK	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Reservation Rd	EB	46.2	A	42.5	A
	WB	40.3	B	40.9	B

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 5-10:
EXISTING WITH JIV GAMING PROJECT WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS TO MELODY RD (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	FRIDAY		SATURDAY	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Reservation Rd	EB	41.6	B	43.6	A
	WB	39.1	B	39.5	B

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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6.0 NEAR TERM (2015) NO PROJECT CONDITIONS

This section provides a description of Near Term (2015) conditions without the construction of the proposed roadway improvement by the Proposed Project.

Road Network

No roadway network changes are assumed to take place under the Near Term scenario. The same roadway network conditions as described in Chapter 3 are assumed for this scenario.

Cumulative Projects

There are fifteen potential cumulative projects that could add traffic to the study area intersections. Information for the JIV Gaming Project trip generation was extracted from the *Jamul Indian Village Final Tribal Environmental Evaluation*, dated January 2013. Information for the other cumulative projects was extracted from the approved *Traffic Impact Analysis for the Peaceful Valley Ranch (TM – 5341 RPL5)*, dated April 12, 2007.

The fifteen identified projects are the following:

1. ***Jamul Indian Village Gaming Project*** proposes to construct a 203,000 square feet gaming facility on a 6.2 acre reservation held in trust by the United States for the benefit of the Jamul Indian Village. The external boundaries of the reservation lie within the Community of Jamul, County of San Diego. This project is estimated to generate 9,000 ADT with 420 inbound/179 outbound trips during the AM weekday peak-hour and 533 inbound/472 outbound trips during the weekday PM peak-hour.

2. ***TPM 20550 (Morgan Minor Subdivision)*** proposes to construct 2 single-family estate homes. The project site is proposed north of the Procter Valley Road/Poplar Meadow Lane intersection. The project was manually calculated using SANDAG's *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (April 2002) for estate homes. The project trips were calculated to generate 24 ADT with 1 inbound/1 outbound trip during the AM peak-hour and 1 inbound/1 outbound trip during the PM peak-hour.

3. ***TM 5154 RPL1 (Hendrix Subdivision)*** is located east of SR 94 (Campo Road) on Las Palmas Road. The project proposes to develop 5 single-family estate homes. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 60 ADT with 2 inbound/3 outbound trips during the AM peak-hour and 4 inbound/2 outbound trips during the PM peak-hour.

4. ***TM 5213 RPL2 (Mintz Subdivision)*** is located north of Skyline Truck Trail and east of Hidden Trail drive. The project proposes to develop approximately 25 acres of land into 10 single-family estate homes. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 120 ADT with 3 inbound/7 outbound trips during the AM peak-hour and 8 inbound/4 outbound trips during the PM peak-hour.

5. ***TM 5289 RPL2 (Jamul Highlands Subdivision)*** proposes to construct 25 single-family estate homes. The project site is proposed south of the Valley Road/Jamul Highlands Road intersection. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate

homes. The project is calculated to generate 300 ADT with 7 inbound/l9 outbound trips during the AM peak-hour and 21 inbound/9 outbound trips during the PM peak-hour.

6. ***TPM 20626*** proposes to construct 3 single-family estate homes. The project site is proposed on the west side of Procter Valley Road, just north of the Proctor Valley Road/Melody Road intersection. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 36 ADT with 1 inbound/2 outbound trips during the AM peak-hour and 3 inbound/1 outbound trips during the PM peak-hour.

7. ***TPM 20628 RPLI (Yacoo Minor Subdivision)*** proposes to construct 4 single-family estate homes. The project site is proposed on Schlee Canyon Road north of Procter Valley Road. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 48 ADT with 1 inbound/3 outbound trips during the AM peak-hour and 4 inbound/1 outbound trips during the PM peak-hour.

8. A Residential Development is located just east of the Proposed Project and south of Olive Vista Drive. The project proposes to develop 20 single-family estate homes. The project is calculated to generate 240 ADT with 6 inbound/13 outbound trips during the AM peak-hour and 17 inbound/7 outbound trips during the PM peak-hour.

9. ***TPM 20599 RPLI (Blanco Parcel Map)*** proposes to construct 4 single-family estate homes. The project site is proposed on the east side of SR 94, north of the Melody Road. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 48 ADT with l inbound/3 outbound trips during the AM peak-hour and 4 inbound/1 outbound trips during the PM peak-hour.

10. ***TPM 20868 (Stein Barth Minor Subdivision)*** is located just north of the Proposed Project and south of Olive Vista Drive. The project proposes to develop 2 single-family estate homes. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 24 ADT with 1 inbound/1 outbound trip during the AM peak-hour and 1 inbound/1 outbound trip during the PM peak-hour.

11. ***TPM 20594 (Pioneer Minor Subdivision)*** is located just west of the Proposed Project and north of Melody Lane. The project proposes to develop 3 single-family estate homes. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 36 ADT with 1 inbound/2 outbound trips during the AM peak-hour and 3 inbound/1 outbound trips during the PM peak-hour.

12. ***Otay Ranch -Village 19*** is located south west of the Proposed Project and south of Melody Lane. The project proposes to develop 20 single-family estate homes. The project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 240 ADT with 6 inbound/13 outbound trips during the AM peak-hour and 17 inbound/7 outbound trips during the PM peak-hour.

13. ***Jamul Estates II*** is located just north east of the Proposed Project. The maximum allowable developable lots are 68 single-family estate homes based on the current zoning. Therefore, the project trips were manually calculated using SANDAG's Trip Rates (April 2002) for estate homes. The project is calculated to generate 816 ADT with 20 inbound/46 outbound trips during the AM peak-hour and 57 inbound/24 outbound trips during the PM peak-hour.

14. ***Simpson Farms*** is generally located on the northeast comer of the SR 94 (Campo Road)/Jefferson Road intersection in the Jamul Community of San Diego County. The project proposes to develop 98 single-family estate homes and 115,000 square feet (sf) of commercial uses. The project trips were calculated to generate approximately 6,500 ADT with approximately 124 inbound/130 outbound trips during the AM peak-hour and 323 inbound/275 outbound trips during the PM peak-hour.

15. ***Peaceful Valley Ranch*** project proposes the subdivision of 181.31 acres for an estate residential development, 46 new estate residential lots, a 6.7 acres equestrian facility and a new joint-use fire and administration offices for the Rural Fire Protection District and the US Fish and Wildlife Services. The project is located east of SR 94 and will use the intersection of SR 94 and Melody Road as a single access point. The total project is calculated to generate approximately 750 ADT with 43 inbound/46 outbound trips during the AM peak hour and 56 inbound/46 outbound trips during the PM peak hour.

Appendix I contains the cumulative project trip distribution and assignment within the study area.

Figures 6-1 illustrate the cumulative traffic trip generation for the study area intersections within the study area.

Traffic Volumes

Traffic volumes for the Near Term (2015) No Project Conditions were estimated by adding the near-term cumulative project traffic to the Existing Baseline traffic volumes. In addition, to account for other projects not yet identified by Caltrans or the County of San Diego, a traffic volume growth rate was calculated for each movement and added to the existing traffic counts for a period of five years (2010 and 2015). The traffic volume growth rate varies by location and it is based on a liner extrapolation of traffic volumes between the Horizon Year 2035 volumes and Existing plus JIV Gaming Project and other approved/pending cumulative project volumes. **Figure 6-2** shows Near Term (2015) No Project peak-hour volumes for a typical weekday. **Figure 6-3** shows the Near Term (2015) No Project peak-hour volumes for a typical Friday and Saturday.

Intersection Analysis (HCM)

Tables 6-1 and 6-2 display the peak-hour LOS analysis results for the study intersections under Near Term (2015) No Project conditions. As shown in the tables, the following intersections would operate at LOS D, E or F for at least one peak period analyzed:

- SR 94 (Campo Road) & Via Mercado (LOS D weekday a.m. peak-hour, LOS F weekday p.m. peak-hour, and LOS E Friday p.m. peak-hour);
- SR 94 (Campo Road) & Jamacha Boulevard (LOS E weekday p.m. peak-hour, and LOS D Friday p.m. peak-hour);
- SR 94 (Campo Road) & Jamacha Road (LOS D weekday a.m. peak-hour, LOS F weekday p.m. peak-hour, E Friday p.m. peak-hour and D Saturday p.m. peak-hour);
- SR 94 (Campo Road) & Cougar Canyon Road (LOS D weekday p.m. peak-hour);
- SR 94 (Campo Road) & Steele Canyon Road (LOS D weekday a.m. peak-hour, LOS F weekday p.m. peak-hour, and LOS E Friday p.m. peak-hour);
- SR 94 (Campo Road) & Lyons Valley Road (LOS F all peak-hour periods analyzed);
- SR 94 (Campo Road) & Jefferson Road (LOS D a.m. peak-hour, LOS E p.m. peak-hour, LOS D Friday p.m. peak-hour);

- SR 94 (Campo Road) & Maxfield Road (LOS D a.m. peak-hour, LOS F weekday and Friday p.m. peak-hour, LOS E Saturday p.m. peak-hour);
- SR 94 (Campo Road) & Melody Road (LOS E a.m. peak-hour, LOS F p.m. peak-hour, LOS F p.m. peak-hour, and LOS E Saturday p.m. peak-hour);
- SR 94 (Campo Road) & Reservation Road (LOS F all peak-hour periods analyzed); and
- SR 94 (Campo Road) & Otay Lakes Road (LOS D Friday p.m. peak-hour).

Appendix E contains the intersection LOS calculation worksheets.

Intersection Analysis (ILV)

Tables 6-3 and 6-4 display the ILV analysis results for the Caltrans-owned signalized intersections under Near Term (2015) No Project conditions for all peak hours analyzed. As shown in the table, all intersections along SR 94 (Campo Road) would operate at below or approaching capacity during all peak periods, except for the following intersections, which operate at above capacity conditions:

- SR 94 (Campo Road) & Via Mercado (weekday a.m. and p.m. peak-hours, Friday p.m. peak-hour);
- SR 94 (Campo Road) & Jamacha Boulevard (weekday p.m. peak-hour and Friday p.m. peak-hour);
- SR 94 (Campo Road) & Jamacha Road (weekday p.m. peak-hour);
- SR 94 (Campo Road) & Cougar Canyon Road (weekday p.m. peak-hour);
- SR 94 (Campo Road) & Steele Canyon Road (weekday a.m. and p.m. peak-hours and Friday p.m. peak-hour); and
- SR 94 (Campo Road) & Jefferson Road (weekday p.m. peak-hours and Friday p.m. peak-hour).

Appendix F contains the ILV worksheets.

HCM Peak-Hour Arterial Analysis

Tables 6-5 and 6-6 display the peak-hour arterial analysis along SR 94 (Campo Road) between Via Mercado and Jefferson Road/Proctor Valley Road under the Near Term (2015) No Project Conditions. As shown in the table, the roadway segment would function at LOS C or better under the Near Term (2015) No Project conditions, except for the following segment:

- SR 94 (Campo Road) between Via Mercado and Proctor Valley Road (LOS D weekday p.m. peak-hour).

Appendix G contains the peak-hour arterial analysis worksheets.

HCM Peak-Hour Two-Lane Highway Analysis

Table 6-7 displays the peak-hour two-lane highway analysis along SR 94 (Campo Road) between Jefferson Road/Proctor Valley Road and Otay Lakes Road under Near Term (2015) No Project Conditions. As shown in the table, all roadway segments within the study area would function at LOS D or E for all peak-hours analyzed..

Appendix H contains the two-way two-lane analysis worksheets.

SR 94 Improvement Project

1

Via Mercado: ⇦ 303 / 553 — SR 94

408 / 672 ⇨

2

Jamacha Blvd.: ⇦ 303 / 553; ⇨ 9 / 24 — SR 94

408 / 672 ⇨; ⇗ 21 / 27

3

SR 94: Dwy. — ⇨ 55 / 76 — Jamacha Rd.

429 / 699 ⇦ SR 94; ⇩ 312 / 577; ⇗ 51 / 74

4

⇦ 0 / 10; ⇨ 0 / 20 — Cougar Canyon Rd.: ⇗ 8 / 3; ⇦ 363 / 640 — SR 94

5 / 0 ⇗; 483 / 775 ⇨

5

⇦ 5 / 3; ⇨ 49 / 77 — Steele Canyon Rd.: ⇗ 35 / 66; ⇦ 366 / 640 — SR 94

3 / 8 ⇗; 480 / 787 ⇨

6

⇦ 27 / 24; ⇨ 4 / 5 — Lyons Valley Rd.: ⇗ 2 / 5; ⇦ 367 / 682 — SR 94

13 / 42 ⇗; 506 / 815 ⇨ Indian Springs Dr.

7

⇦ 104 / 220; ⇩ 1 / 1; ⇨ 35 / 37 — Jefferson Rd.: ⇗ 16 / 38; ⇦ 238 / 441 — SR 94

100 / 259 ⇗; 395 / 532 ⇩; 25 / 29 ⇨ Proctor Valley Rd.: ⇩ 24 / 23; ⇧ 1 / 0

8

⇦ 21 / 25; ⇩ 348 / 430; ⇨ 41 / 53 — SR 94: ⇗ 44 / 44; ⇨ 2 / 2

Maxfield Rd.: 13 / 23 ⇗; 16 / 17 ⇨; ⇩ 11 / 19; ⇧ 148 / 389; ⇗ 2 / 3

9

⇦ 21 / 25; ⇩ 348 / 430; ⇨ 41 / 53 — SR 94: ⇗ 44 / 44; ⇨ 2 / 2

Melody Rd.: 13 / 23 ⇗; 16 / 17 ⇨; ⇩ 11 / 19; ⇧ 148 / 389; ⇗ 2 / 3 — Peaceful Valley Ranch Rd.

10

⇦ 344 / 437; ⇩ 22 / 12 — SR 94

Reservation Rd.: 147 / 387 ⇗; 32 / 85 ⇨; ⇩ 76 / 96; ⇧ 14 / 25

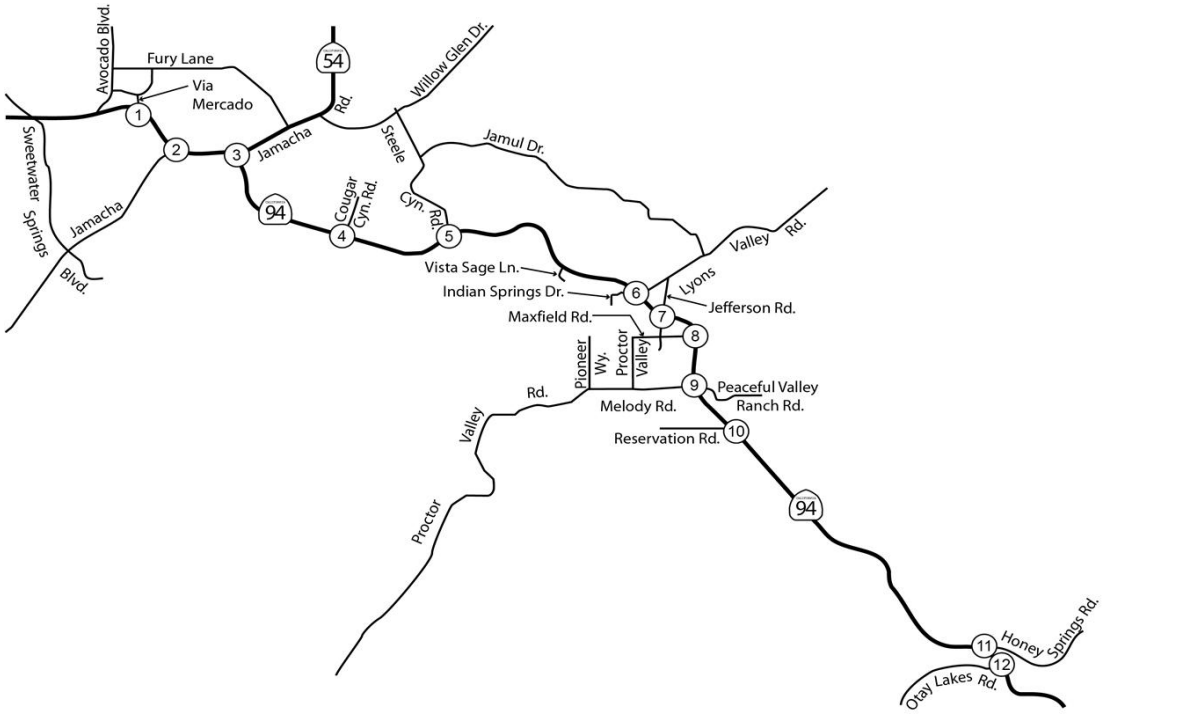
11

52 / 92 ⇩; 2 / 5 ⇨ — SR 94: ⇗ 4 / 5 — Honey Springs Rd.: ⇧ 85 / 116

12

⇦ 29 / 75; ⇩ 24 / 17 — SR 94

Otay Lakes Rd.: 67 / 85 ⇗; ⇧ 18 / 30



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 6-1

Cumulative Project Peak-Hour Traffic Assignment Volumes (Weekday)

K:\SND_TPTO\095848001 - JIV Design\Reports\Traffic Report\TIA-CEQA\Excel\[848001TA01.xlsm]Cum+Casino Figure 1-16

SR 94 Improvement Project

1

279 / 129	189 / 350	Via Mercado

235 / 270	SR 94
2253 / 1840	

59 / 244	
1385 / 2753	

2

0 / 4	4 / 4	4 / 7	Jamacha Blvd.

14 / 9	SR 94
2107 / 1850	
473 / 522	

7 / 3	
1427 / 2828	
92 / 192	

271 / 168	7 / 6	550 / 680

3

37 / 60	12 / 18	10 / 44	Dwy.

18 / 39	SR 94
1354 / 1261	
207 / 260	

72 / 90	
1033 / 2106	
954 / 1494	

1298 / 1127	42 / 29	298 / 268

4

373 / 156	118 / 97	Cougar Canyon Rd.

288 / 49	SR 94
1111 / 1061	

324 / 133	
790 / 1600	

5

261 / 102	156 / 296	Steele Canyon Rd.

202 / 151	SR 94
1140 / 1011	
4 / 6	

121 / 119	
801 / 1559	
0 / 2	

4 / 2	2 / 3	2 / 23

6

384 / 188	3 / 2	12 / 13	Lyons Valley Rd.

7 / 18	SR 94
981 / 953	
9 / 3	

178 / 372	
765 / 1409	
8 / 10	

12 / 7	2 / 3	5 / 9

7

173 / 240	94 / 93	83 / 77	Jefferson Rd.

72 / 80	SR 94
668 / 650	
12 / 29	

116 / 279	
592 / 951	
94 / 280	

270 / 126	101 / 100	22 / 77

8

12 / 58	613 / 1051	SR 94

Maxfield Rd.	
7 / 40	
5 / 32	

7 / 13	
745 / 680	

9

33 / 34	492 / 875	53 / 57	SR 94

46 / 49	Melody Rd.
3 / 3	Peaceful Valley Ranch Rd.

32 / 34	
0 / 4	
23 / 24	

16 / 24	587 / 586	8 / 4

10

344 / 437	240 / 456	SR 94

Reservation Rd.	
147 / 387	
32 / 85	

76 / 96	
428 / 226	

11

171 / 506	19 / 79	SR 94

72 / 41	Honey Springs Rd.
60 / 34	

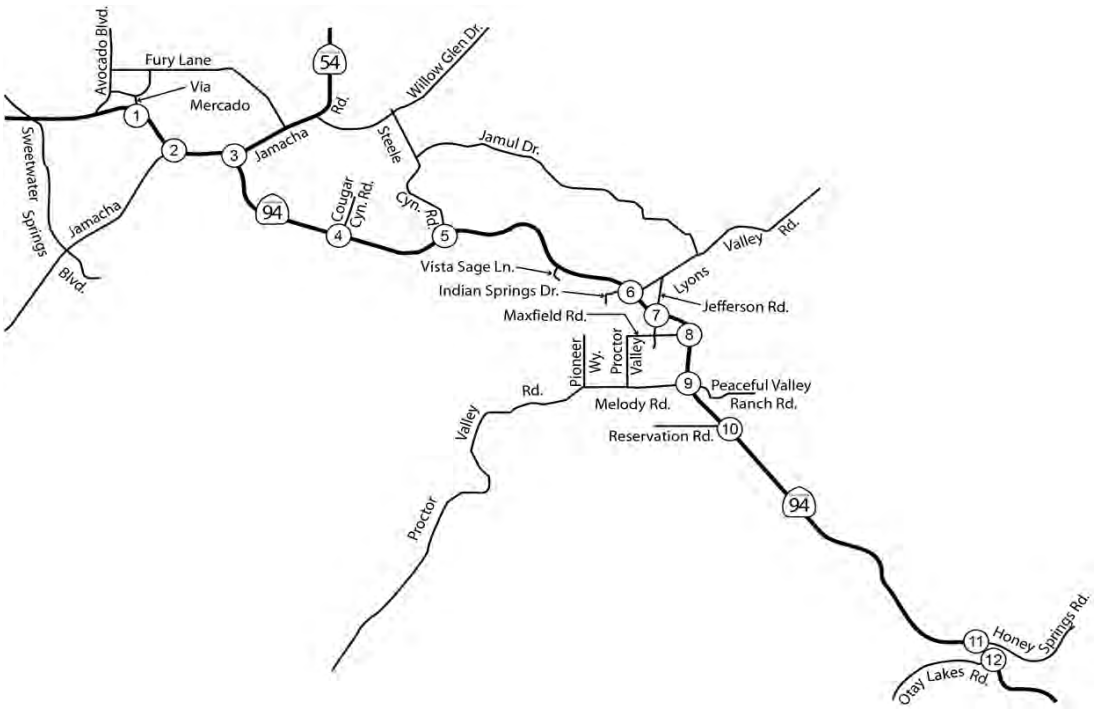
479 / 258	
24 / 61	

12

119 / 120	202 / 412	SR 94

Otay Lakes Rd.	
98 / 152	
75 / 112	

103 / 77	
397 / 173	



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 6-2

Near Term (2015) No Project Peak-Hour Traffic Volumes (Weekday)

K:\SND_TPTO\095848001 - JIV Design\Reports\Traffic Report\TIA-CEQA\Excel\[848001TA01.xlsm]NT No Build Figure 1-16

SR 94 Improvement Project

1

194 / 153	Via Mercado	339 / 292
382 / 310		1821 / 1657
		SR 94
207 / 119		
2303 / 1934		

2

2 / 5	Jamacha Blvd.	7 / 41
3 / 4		1948 / 1796
9 / 6		603 / 512
		SR 94
7 / 70		181 / 139
2448 / 1996		3 / 13
201 / 171		766 / 585

3

80 / 63	Dwy.	50 / 31
40 / 25		1382 / 1235
52 / 36		268 / 213
SR 94		Jamacha Rd.
115 / 81		1155 / 1145
1978 / 1612		34 / 42
1251 / 980	SR 94	272 / 233

4

120 / 6	Cougar Canyon Rd.	47 / 4
68 / 2		955 / 962
		SR 94
92 / 5		
1346 / 955		

5

108 / 70	Steele Canyon Rd.	170 / 154
6 / 3		862 / 936
297 / 185		6 / 3
		SR 94
112 / 60		2 / 2
1256 / 916		4 / 3
2 / 0		21 / 8

6

192 / 188	Lyons Valley Rd.	18 / 24
2 / 0		870 / 906
15 / 6		6 / 7
		SR 94
336 / 186		7 / 7
1211 / 941		2 / 0
15 / 8	Indian Springs Dr.	5 / 7

7

22 / 19	Jefferson Rd.	72 / 65
107 / 77		760 / 821
93 / 64		33 / 32
		SR 94
28 / 18		149 / 136
956 / 763		112 / 62
314 / 219	Proctor Valley Rd.	120 / 66

8

31 / 15	SR 94	
1087 / 914		
Maxfield Rd.		
25 / 12		5 / 7
28 / 15		839 / 791

9

16 / 19	SR 94	9 / 9
1036 / 800		4 / 0
5 / 5		Peaceful Valley Ranch Rd.
Melody Rd.		
15 / 11		
19 / 20		25 / 19
		819 / 850

10

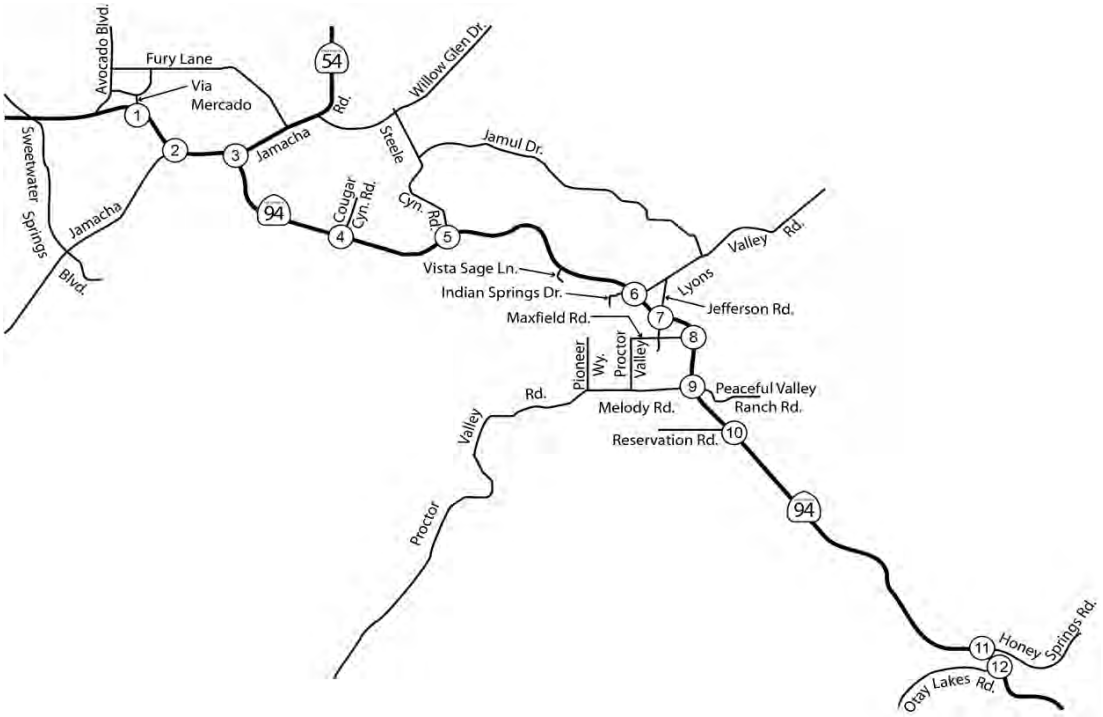
529 / 532	SR 94	
545 / 323		
Reservation Rd.		
620 / 620		116 / 118
136 / 141		189 / 221

11

580 / 404	SR 94	34 / 44
72 / 48		40 / 45
		Honey Springs Rd.
		346 / 303
		64 / 44

12

187 / 163	SR 94	
519 / 278		
Otay Lakes Rd.		
153 / 141		67 / 63
147 / 78		148 / 189



Legend

X / Y = FRI / SAT PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 6-3

Near Term (2015) No Project Peak-Hour Traffic Volumes (Friday/Saturday)

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TABLE 6-1:
NEAR TERM (2015) NO PROJECT
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	NEAR TERM NO BUILD	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	AM	44.2	**D**
			PM	91.7	**F**
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	AM	18.8	B
			PM	57.1	**E**
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	AM	36.1	**D**
			PM	94.2	**F**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	AM	34.7	C
			PM	45.6	**D**
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	AM	43.9	**D**
			PM	119.7	**F**
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	AM	ECL	**F**
			PM	ECL	**F**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	AM	53.2	**D**
			PM	61.1	**E**
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	AM	25.4	**D**
			PM	111.2	**F**
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	AM	43.5	**E**
			PM	179.9	**F**
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	AM	56.7	**F**
			PM	767.0	**F**
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	AM	16.8	C
			PM	17.2	C
12	SR 94 (Campo Rd) & Otay Lakes Rd.	One-Way Stop	AM	20.0	C
			PM	23.8	C

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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TABLE 6-2:
NEAR TERM (2015) NO PROJECT
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	NEAR TERM NO BUILD	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	FRI PM	65.2	**E**
			SAT PM	32.6	C
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	FRI PM	52.4	**D**
			SAT PM	22.2	C
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	FRI PM	71.2	**E**
			SAT PM	41.5	**D**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	FRI PM	19.9	B
			SAT PM	9.5	A
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	FRI PM	69.5	**E**
			SAT PM	29.9	C
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	FRI PM	ECL	**F**
			SAT PM	1472.9	**F**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	FRI PM	41.9	**D**
			SAT PM	23.7	C
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	FRI PM	96.0	**F**
			SAT PM	40.1	**E**
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	FRI PM	109.1	**F**
			SAT PM	48.3	**E**
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	FRI PM	ECL	**F**
			SAT PM	ECL	**F**
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	FRI PM	22.8	C
			SAT PM	16.4	C
12	SR 94 (Campo Rd) & Otay Lakes Rd.	One-Way Stop	FRI PM	32.5	**D**
			SAT PM	18.2	C

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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TABLE 6-3:
NEAR TERM (2015) NO PROJECT
ILV ANALYSIS (WEEKDAY)

INTERSECTION		PEAK HOUR	NEAR TERM NO BUILD	
			ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	1537	**Above Capacity**
		PM	1727	**Above Capacity**
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	1267	Approaching Capacity
		PM	1631	**Above Capacity**
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1210	Approaching Capacity
		PM	1684	**Above Capacity**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1484	Approaching Capacity
		PM	1697	**Above Capacity**
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1530	**Above Capacity**
		PM	1891	**Above Capacity**
7	SR 94 (Campo Rd) & Jefferson Rd	AM	1249	Approaching Capacity
		PM	1670	**Above Capacity**

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 6-4:
NEAR TERM (2015) NO BUILD
ILV ANALYSIS (FRIDAY/SATURDAY)

INTERSECTION		PEAK HOUR	NEAR TERM NO BUILD	
			ILV TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	1669	**Above Capacity**
		SAT PM	1404	Approaching Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	FRI PM	1592	**Above Capacity**
		SAT PM	1291	Approaching Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	1465	Approaching Capacity
		SAT PM	1281	Approaching Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	1420	Approaching Capacity
		SAT PM	968	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	FRI PM	1591	**Above Capacity**
		SAT PM	1197	Below Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	FRI PM	1684	**Above Capacity**
		SAT PM	1288	Approaching Capacity

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 6-5:
NEAR TERM (2015) NO BUILD
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	AM PEAK		PM PEAK	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	45.2	A	24.6	**D**
	WB	35.5	B	33.8	C

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 6-6:
NEAR TERM (2015) NO BUILD
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	FRIDAY		SATURDAY	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	31.6	C	44.9	A
	WB	34.6	B	39.0	B

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 6-7:
NEAR TERM (2015) NO PROJECT
TWO-LANE HIGHWAY SEGMENT ANALYSIS

HIGHWAY SEGMENT	PEAK HOUR	NEAR TERM		
		LOS (a)	Average Travel Speed (mph)	PTSF (b)
SR-94				
Proctor Valley Road to Melody Rd	Weekday AM	**E**	35.9	81.9%
	Weekday PM	**E**	32.8	87.4%
	Friday PM	**E**	31.3	89.3%
	Saturday PM	**E**	33.2	86.8%
Melody Rd to Project Driveway	Weekday AM	**D**	41.3	76.6%
	Weekday PM	**E**	32.8	87.4%
	Friday PM	**E**	35.5	87.9%
	Saturday PM	**E**	37.2	85.5%
Project Driveway to Otay Lakes Rd	Weekday AM	**D**	43.1	69.7%
	Weekday PM	**D**	42.6	71.9%
	Friday PM	**D**	42.1	73.2%
	Saturday PM	**D**	43.2	69.3%

Notes:
Bold values indicate intersections operating at LOS D, E or F.
(a) LOS is based on Average Travel Speed and Percent Time Spent Following per Chapter 12 of the 2000 Highway Capacity Manual.
(b) PTSF = Percent Time Spent Following

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7.0 NEAR TERM (2015) WITH PROJECT CONDITIONS

This section summarizes the operations of the existing roadway circulation network with the addition of the Proposed Project.

Road Network

Near Term (2015) Plus Project scenario was analyzed with the proposed intersection traffic control, striping, and roadway facility modifications described in Chapter 1.

Traffic Volumes

Traffic volumes for this scenario are equal to the traffic volumes for the Near Term (2015) No Project conditions. It is assumed that with the exception of Alternative 3 project scenario, the Proposed Project will not change the traffic volumes and patterns along the study area. For Alternative 3 proposed improvements, however, the traffic volumes associated with the JIV Gaming Project will enter SR 94 (Campo Road) via Melody Road. For this reason, peak-hour volumes at the SR 94 (Campo Road)/ Melody Road/Peaceful Valley Ranch Road and the SR 94 (Campo Road)/Reservation Road intersections were adjusted. The adjustment of traffic volumes was done so all traffic related to the JIV Gaming Project would turn to and from Melody Road instead of a driveway at Daisy Drive or Reservation Road.

Figure 7-1 illustrates the Near Term (2015) peak-hour traffic volumes at the study intersections for a typical weekday. **Figure 7-2** illustrates the Near Term (2015) traffic volumes at the study intersections for typical Friday and Saturday peak-hour periods. **Figure 7-3** illustrates the peak-hour traffic volume adjustments needed for the evaluation of the Alternative 3 project scenario, where the JIV Gaming Project related traffic uses Melody Road to access the SR 94.

Intersection Analysis (HCM)

Tables 7-1 and 7-2 display the peak-hour LOS analysis results for the study intersections under the Near Term (2015) with Project Alternatives 1-2 conditions for all peak-hour scenarios analyzed. As shown in the tables, with the implementation of the Proposed Project improvements, all intersections will operate with equal or less delay than the before project conditions or will operate at an acceptable level of service.

Tables 7-3 and 7-4 display the peak-hour LOS analysis results for the study intersections under the Near Term (2015) with Project Alternatives 3 conditions for all peak-hour scenarios analyzed. As shown in the tables, with the implementation of the Proposed Project improvements, all intersections will operate with equal or less delay than the before project conditions or will operate at an acceptable level of service.

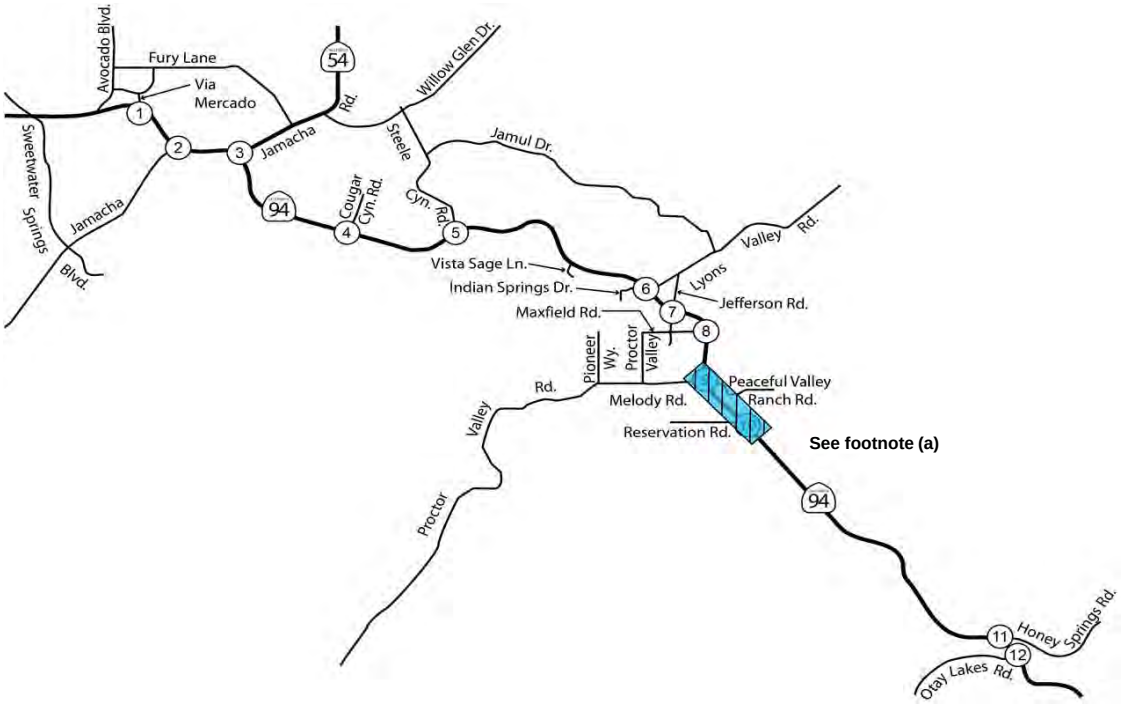
Intersection Analysis (ILV)

Tables 7-5 and 7-6 display the ILV analysis results for the Caltrans-owned signalized intersections under Near Term (2015) with Project conditions for all peak-hours analyzed. As shown in the table, all intersections along SR 94 (Campo Road) would have equal or better operations with the Proposed Project than before project conditions.

Appendix F contains the ILV worksheets.

SR 94 Improvement Project

1	⇦ 279 / 129 ⇨ 189 / 350 **Via Mercado**	⇨ 235 / 270 ⇦ 2253 / 1840 **SR 94**	**2**	⇦ 0 / 4 ⇩ 4 / 4 ⇨ 4 / 7 **Jamacha Blvd.**	⇨ 14 / 9 ⇦ 2107 / 1850 ⇨ 473 / 522 **SR 94**	**3**	⇦ 37 / 60 ⇩ 12 / 18 ⇨ 10 / 44 **Dwy.** **SR 94**	⇨ 18 / 39 ⇦ 1354 / 1261 ⇨ 207 / 260 **Jamacha Rd.**	**4**	⇦ 373 / 156 ⇨ 118 / 97 **Cougar Canyon Rd.**	⇨ 288 / 49 ⇦ 1111 / 1061 **SR 94**
	59 / 244 ⇨ 1385 / 2753 ⇨			7 / 3 ⇨ 1427 / 2828 ⇨ 92 / 192 ⇨	⇨ ⇧ ⇨ 271 / 168 7 / 6 550 / 680		72 / 90 ⇨ 1033 / 2106 ⇨ 954 / 1494 ⇨ **SR 94**	⇨ ⇧ ⇨ 1298 / 1127 42 / 29 298 / 268		324 / 133 ⇨ 790 / 1600 ⇨	
5	⇦ 261 / 102 ⇨ 156 / 296 **Steele Canyon Rd.**	⇨ 202 / 151 ⇦ 1140 / 1011 ⇨ 4 / 6 **SR 94**	**6**	⇦ 384 / 188 ⇩ 3 / 2 ⇨ 12 / 13 **Lyons Valley Rd.**	⇨ 7 / 18 ⇦ 981 / 953 ⇨ 9 / 3 **SR 94**	**7**	⇦ 173 / 240 ⇩ 94 / 93 ⇨ 83 / 77 **Jefferson Rd.**	⇨ 72 / 80 ⇦ 668 / 650 ⇨ 12 / 29 **SR 94**	**8**	⇦ 12 / 58 ⇩ 613 / 1051 **SR 94** **Maxfield Rd.**	
	121 / 119 ⇨ 801 / 1559 ⇨ 0 / 2 ⇨	⇨ ⇧ ⇨ 4 / 2 2 / 3 2 / 23		178 / 372 ⇨ 765 / 1409 ⇨ 8 / 10 ⇨ **Indian Springs Dr.**	⇨ ⇧ ⇨ 12 / 7 2 / 3 5 / 9		116 / 279 ⇨ 592 / 951 ⇨ 94 / 280 ⇨ **Proctor Valley Rd.**	⇨ ⇧ ⇨ 270 / 126 101 / 100 22 / 77		7 / 40 ⇨ 5 / 32 ⇨	⇨ ⇧ 7 / 13 745 / 680
9	33 / 34 492 / 875 53 / 57 **SR 94** **Melody Rd.**	⇨ 46 / 49 ⇨ 3 / 3 **Peaceful Valley Ranch Rd.**	**10**	344 / 437 240 / 456 **SR 94** **Reservation Rd.**		**11**	171 / 506 19 / 79 **SR 94**	⇨ 72 / 41 ⇨ 60 / 34 **Honey Springs Rd.**	**12**	119 / 120 202 / 412 **SR 94** **Otay Lakes Rd.**	
	32 / 34 ⇨ 0 / 4 ⇨ 23 / 24 ⇨	⇨ ⇧ ⇨ 16 / 24 587 / 586 8 / 4		147 / 387 ⇨ 32 / 85 ⇨	⇨ ⇧ 76 / 96 428 / 226			⇧ ⇨ 479 / 258 24 / 61		98 / 152 ⇨ 75 / 112 ⇨	⇨ ⇧ 103 / 77 397 / 173



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

(a) Volumes for Alternative 1 and 2 would remain the same. Please refer to Figure 7-3 for Alternative 3 traffic volumes.

Kimley-Horn and Associates, Inc.

FIGURE 7-1

Near Term (2015) with Project (Alt 1-2) Peak-Hour Traffic Volumes (Weekday)

K:\SND_TPTO\095848001 - JIV Design\Reports\Traffic Report\TIA-CEQA\Excel\[848001TA01.xlsm]NTWP Figure 1-16

SR 94 Improvement Project

1

194 / 153	382 / 310	Via Mercado
339 / 292	1821 / 1657	SR 94
207 / 119	2303 / 1934	

2

2 / 5	3 / 4	9 / 6
7 / 41	1948 / 1796	603 / 512
7 / 70	2448 / 1996	201 / 171
181 / 139	3 / 13	766 / 585

Jamacha Blvd.; SR 94

3

80 / 63	40 / 25	52 / 36
50 / 31	1382 / 1235	268 / 213
115 / 81	1978 / 1612	1251 / 980
1155 / 1145	34 / 42	272 / 233

Dwy.; SR 94; Jamacha Rd.

4

120 / 6	68 / 2	Cougar Canyon Rd.
47 / 4	955 / 962	SR 94
92 / 5	1346 / 955	

5

108 / 70	6 / 3	297 / 185
170 / 154	862 / 936	6 / 3
112 / 60	1256 / 916	2 / 0
2 / 2	4 / 3	21 / 8

Steele Canyon Rd.; SR 94

6

192 / 188	2 / 0	15 / 6
18 / 24	870 / 906	6 / 7
336 / 186	1211 / 941	15 / 8
7 / 7	2 / 0	5 / 7

Lyons Valley Rd.; SR 94; Indian Springs Dr.

7

22 / 19	107 / 77	93 / 64
72 / 65	760 / 821	33 / 32
28 / 18	956 / 763	314 / 219
149 / 136	112 / 62	120 / 66

Jefferson Rd.; SR 94; Proctor Valley Rd.

8

31 / 15	1087 / 914	SR 94
25 / 12	28 / 15	
5 / 7	839 / 791	

Maxfield Rd.

9

16 / 19	1036 / 800	5 / 5
9 / 9	4 / 0	
15 / 11	19 / 20	
25 / 19	819 / 850	

SR 94; Melody Rd.; Peaceful Valley Ranch Rd.

10

529 / 532	545 / 323	SR 94
620 / 620	136 / 141	
116 / 118	189 / 221	

Reservation Rd.

11

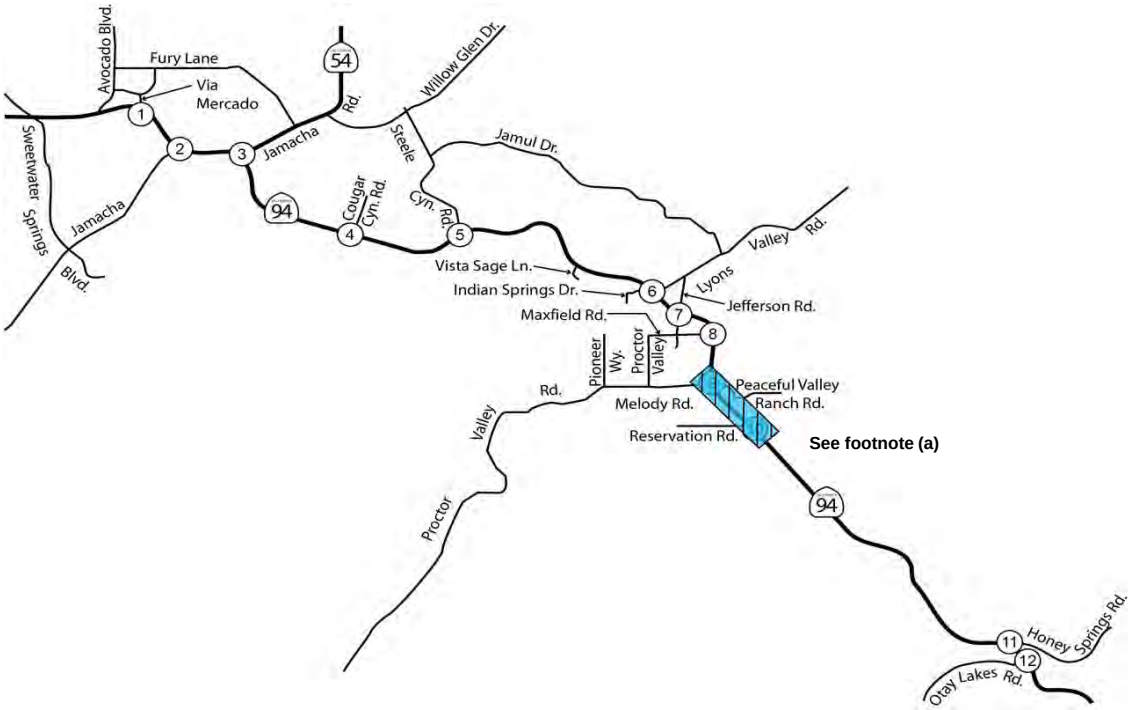
580 / 404	72 / 48	SR 94
34 / 44	40 / 45	
346 / 303	64 / 44	

Honey Springs Rd.

12

187 / 163	519 / 278	SR 94
153 / 141	147 / 78	
67 / 63	148 / 189	

Otay Lakes Rd.



Legend

X / Y = FRI / SAT PEAK HOUR TURNING VOLUMES

NOT TO SCALE

(a) Volumes for Alternative 1 and 2 would remain the same. Please refer to Figure 7-3 for Alternative 3 traffic volumes.

Kimley-Horn and Associates, Inc.

FIGURE 7-2

Near Term (2015) with Project (Alt 1-2) Peak-Hour Traffic Volumes (Friday/Saturday)

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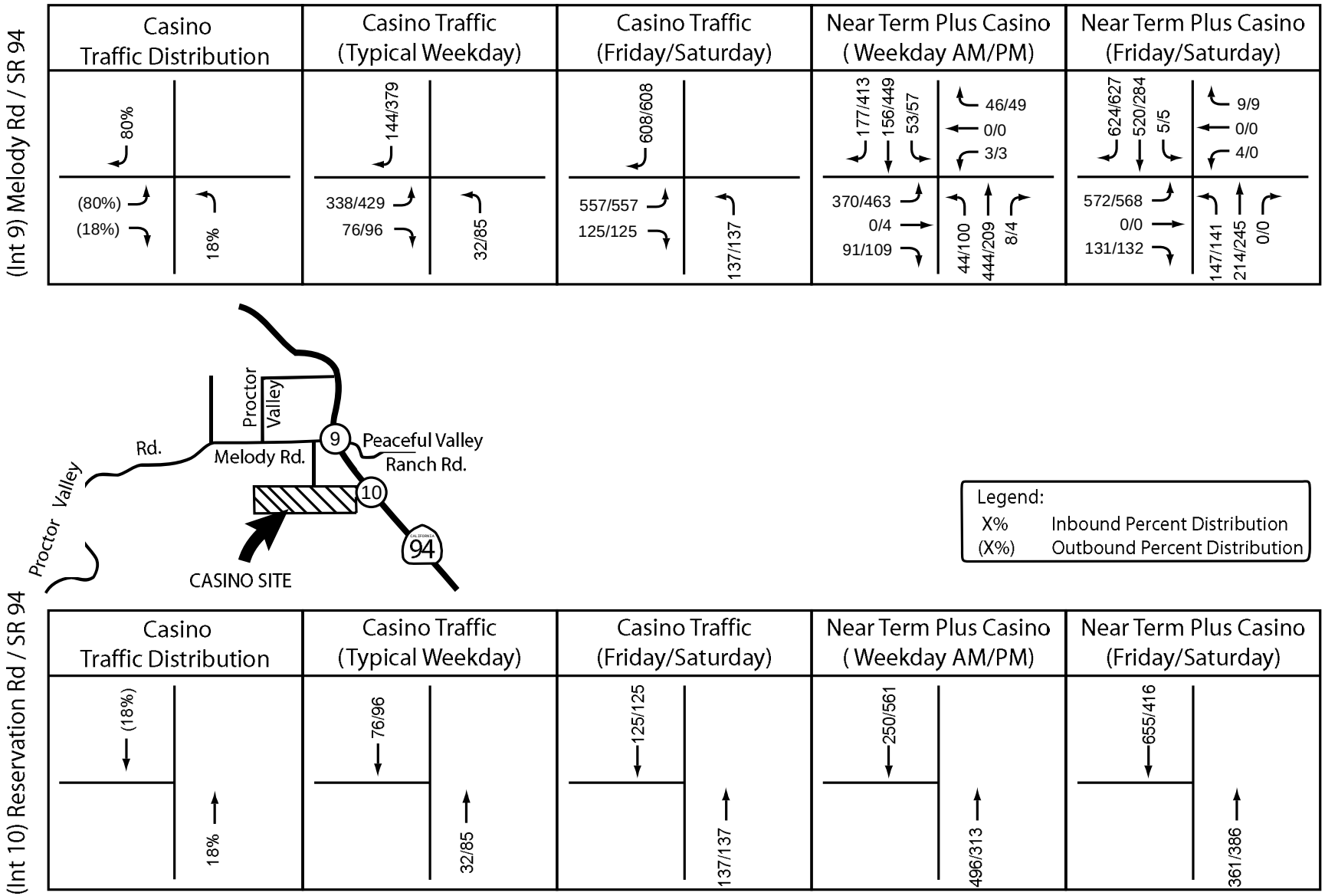

Kimley-Horn and Associates, Inc.

FIGURE 7-3

Near Term (2015) with Project (Alt 3) Peak-Hour Volume Adjustments

TABLE 7-1:
NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 1-2)
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

	INTERSECTION	PEAK HOUR	NEAR TERM (2015) NO BUILD		NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 1-2)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	AM	44.2	**D**	44.2	**D**	0.0	NO
		PM	91.7	**F**	91.7	**F**	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	AM	18.8	B	22.1	C	3.3	NO
		PM	57.1	**E**	50.9	**D**	-6.2	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	36.1	**D**	35.1	**D**	-1.0	NO
		PM	94.2	**F**	66.4	**E**	-27.8	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	34.7	C	34.7	C	0.0	NO
		PM	45.6	**D**	45.6	**D**	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	AM	43.9	**D**	23.1	C	-20.8	NO
		PM	119.7	**F**	28.6	C	-91.1	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	AM	ECL	**F**	27.2	C	-	NO
		PM	ECL	**F**	20.4	C	-	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	AM	53.2	**D**	53.2	**D**	0.0	NO
		PM	61.1	**E**	61.1	**E**	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	AM	25.4	**D**	14.7	B	-10.7	NO
		PM	111.2	**F**	27.0	**D**	-84.2	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	AM	43.5	**D**	8.9	A	-34.6	NO
		PM	179.9	**F**	10.8	B	-169.1	NO
10	SR 94 (Campo Rd) & Reservation Rd.	AM	56.7	**E**	4.8	A	-51.9	NO
		PM	767.0	**F**	7.1	A	-759.9	NO
11	SR 94 (Campo Rd) & Honey Springs Rd.	AM	16.8	C	16.8	C	0.0	NO
		PM	17.2	C	17.2	C	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	AM	20.0	C	20.0	C	0.0	NO
		PM	23.8	C	23.8	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 7-2:
NEAR TERM (2015) WITH PROJECT (ALT 1-2)
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

	INTERSECTION	PEAK HOUR	NEAR TERM (2015) NO BUILD		NEAR TERM (2015) WITH PROJECT (ALT 1-2)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	65.2	**E**	65.2	**E**	0.0	NO
		SAT PM	32.6	C	32.6	C	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	FRI PM	52.4	**D**	40.3	**D**	-12.1	NO
		SAT PM	22.2	C	24.0	C	1.8	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	71.2	**E**	60.4	**E**	-10.8	NO
		SAT PM	41.5	**D**	40.1	**D**	-1.4	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	19.9	B	19.9	B	0.0	NO
		SAT PM	9.5	A	9.5	A	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	FRI PM	69.5	**E**	26.9	C	-42.6	NO
		SAT PM	29.9	C	18.1	B	-11.8	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	FRI PM	ECL	**F**	11.5	B	-	NO
		SAT PM	1472.9	**F**	8.8	A	-1464.1	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	FRI PM	41.9	**D**	41.9	**D**	0.0	NO
		SAT PM	23.7	C	23.7	C	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	FRI PM	96.0	**F**	26.2	**D**	-69.8	NO
		SAT PM	40.1	**E**	19.2	C	-20.9	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	FRI PM	109.1	**F**	8.6	A	-100.5	NO
		SAT PM	48.3	**D**	8.3	A	-40.0	NO
10	SR 94 (Campo Rd) & Reservation Rd.	FRI PM	ECL	**F**	9.4	A	-	NO
		SAT PM	ECL	**F**	7.8	A	-	NO
11	SR 94 (Campo Rd) & Honey Springs Rd.	FRI PM	22.8	C	22.8	C	0.0	NO
		SAT PM	16.4	C	16.4	C	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	FRI PM	32.5	**D**	32.5	**D**	0.0	NO
		SAT PM	18.2	C	18.2	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 7-3:
NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 3)
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

	INTERSECTION	PEAK HOUR	NEAR TERM (2015) NO BUILD		NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 3)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	AM	44.2	**D**	44.2	**D**	0.0	NO
		PM	91.7	**F**	91.7	**F**	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	AM	18.8	B	22.1	C	3.3	NO
		PM	57.1	**E**	50.9	**D**	-6.2	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	36.1	**D**	35.1	**D**	-1.0	NO
		PM	94.2	**F**	66.4	**E**	-27.8	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	34.7	C	34.7	C	0.0	NO
		PM	45.6	**D**	45.6	**D**	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	AM	43.9	**D**	23.1	C	-20.8	NO
		PM	119.7	**F**	28.6	C	-91.1	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	AM	ECL	**F**	27.2	C	-	NO
		PM	ECL	**F**	20.4	C	-	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	AM	53.2	**D**	53.2	**D**	0.0	NO
		PM	61.1	**E**	61.1	**E**	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	AM	25.4	**D**	14.7	B	-10.7	NO
		PM	111.2	**F**	27.0	**D**	-84.2	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	AM	43.5	**D**	18.1	B	-25.4	NO
		PM	179.9	**F**	20.6	C	-159.3	NO
10	SR 94 (Campo Rd) & Reservation Rd.	AM	56.7	**F**	This intersection does not exist under this scenario.			
		PM	767.0	**F**				
11	SR 94 (Campo Rd) & Honey Springs Rd.	AM	16.8	C	16.8	C	0.0	NO
		PM	17.2	C	17.2	C	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	AM	20.0	C	20.0	C	0.0	NO
		PM	23.8	C	23.8	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 7-4:
NEAR TERM (2015) WITH PROJECT (ALT 3)
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

	INTERSECTION	PEAK HOUR	NEAR TERM (2015) NO BUILD		NEAR TERM (2015) WITH PROJECT (ALT 3)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	65.2	**E**	65.2	**E**	0.0	NO
		SAT PM	32.6	C	32.6	C	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	FRI PM	52.4	**D**	40.3	**D**	-12.1	NO
		SAT PM	22.2	C	24.0	C	1.8	NO
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	71.2	**E**	60.4	**E**	-10.8	NO
		SAT PM	41.5	**D**	40.1	**D**	-1.4	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	19.9	B	19.9	B	0.0	NO
		SAT PM	9.5	A	9.5	A	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	FRI PM	69.5	**E**	26.9	C	-42.6	NO
		SAT PM	29.9	C	18.1	B	-11.8	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	FRI PM	ECL	**F**	11.5	B	-	NO
		SAT PM	1472.9	**F**	8.8	A	-1464.1	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	FRI PM	41.9	**D**	41.9	**D**	0.0	NO
		SAT PM	23.7	C	23.7	C	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	FRI PM	96.0	**F**	26.2	**D**	-69.8	NO
		SAT PM	40.1	**E**	19.2	C	-20.9	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	FRI PM	109.1	**F**	19.4	B	-89.7	NO
		SAT PM	48.3	**D**	16.2	B	-32.1	NO
10	SR 94 (Campo Rd) & Reservation Rd.	FRI PM	ECL	**F**	This intersection does not exist under this scenario.			
		SAT PM	ECL	**F**				
11	SR 94 (Campo Rd) & Honey Springs Rd.	FRI PM	22.8	C	22.8	C	0.0	NO
		SAT PM	16.4	C	16.4	C	0.0	NO
12	SR 94 (Campo Rd) & Otay Lakes Rd.	FRI PM	32.5	**D**	32.5	**D**	0.0	NO
		SAT PM	18.2	C	18.2	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 7-5:
NEAR TERM (2015) WITH PROPOSED PROJECT
ILV ANALYSIS (WEEKDAY)

INTERSECTION		PEAK HOUR	NEAR TERM (2015) NO BUILD		NEAR TERM (2015) PLUS PROPOSED PROJECT ALTERNATIVES 1 - 2		NEAR TERM (2015) PLUS PROPOSED PROJECT ALTERNATIVE 3	
			ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	1537	**Above Capacity**	1537	**Above Capacity**	1537	**Above Capacity**
		PM	1727	**Above Capacity**	1727	**Above Capacity**	1727	**Above Capacity**
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	1267	Approaching Capacity	999	Below Capacity	999	Below Capacity
		PM	1631	**Above Capacity**	1384	Approaching Capacity	1384	Approaching Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1210	Approaching Capacity	1210	Approaching Capacity	1210	Approaching Capacity
		PM	1684	**Above Capacity**	1050	Below Capacity	1050	Below Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1484	Approaching Capacity	1484	Approaching Capacity	1484	Approaching Capacity
		PM	1697	**Above Capacity**	1697	**Above Capacity**	1697	**Above Capacity**
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1530	**Above Capacity**	1061	Below Capacity	1061	Below Capacity
		PM	1891	**Above Capacity**	1167	Below Capacity	1167	Below Capacity
6	SR 94 (Campo Rd) & Lyons Valley Rd	AM	This intersection won't be signalized under this scenario		1550	**Above Capacity**	1550	**Above Capacity**
		PM			1610	**Above Capacity**	1610	**Above Capacity**
7	SR 94 (Campo Rd) & Jefferson Rd	AM	1249	Approaching Capacity	1249	Approaching Capacity	1249	Approaching Capacity
		PM	1670	**Above Capacity**	1670	**Above Capacity**	1670	**Above Capacity**
9	SR 94 (Campo Rd) & Melody Rd	AM	This intersection won't be signalized under this scenario		703	Below Capacity	739	Below Capacity
		PM			1028	Below Capacity	790	Below Capacity
10	SR 94 (Campo Rd) & Reservation Rd or Daisy Drive	AM	This intersection won't be signalized under this scenario		502	Below Capacity	This intersection won't be signalized under this scenario	
		PM			746	Below Capacity		

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 7-6:
NEAR TERM (2015) WITH PROJECT
ILV ANALYSIS (FRIDAY/SATURDAY)

INTERSECTION		PEAK HOUR	NEAR TERM (2015) NO BUILD		NEAR TERM (2015) PLUS PROJECT ALTERNATIVES 1 - 3		NEAR TERM (2015) PLUS PROJECT ALTERNATIVE 3	
			ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	1669	**Above Capacity**	1669	**Above Capacity**	1669	**Above Capacity**
		PM	1404	Approaching Capacity	1404	Approaching Capacity	1404	Approaching Capacity
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	1592	**Above Capacity**	1308	Approaching Capacity	1308	Approaching Capacity
		PM	1291	Approaching Capacity	1079	Below Capacity	1079	Below Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1465	Approaching Capacity	1451	Approaching Capacity	1451	Approaching Capacity
		PM	1281	Approaching Capacity	1281	Approaching Capacity	1281	Approaching Capacity
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1420	Approaching Capacity	1420	Approaching Capacity	1420	Approaching Capacity
		PM	968	Below Capacity	968	Below Capacity	968	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1591	**Above Capacity**	962	Below Capacity	962	Below Capacity
		PM	1197	Below Capacity	806	Below Capacity	806	Below Capacity
6	SR 94 (Campo Rd) & Lyons Valley Rd	AM	This intersection won't be signalized under this scenario		1424	Approaching Capacity	1424	Approaching Capacity
		PM			1311	Approaching Capacity	1311	Approaching Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	AM	1684	**Above Capacity**	1684	**Above Capacity**	1684	**Above Capacity**
		PM	1288	Approaching Capacity	1288	Approaching Capacity	1288	Approaching Capacity
9	SR 94 (Campo Rd) & Melody Rd	AM	This intersection won't be signalized under this scenario		1111	Below Capacity	980	Below Capacity
		PM			900	Below Capacity	978	Below Capacity
10	SR 94 (Campo Rd) & Reservation Rd or Daisy Drive	AM	This intersection won't be signalized under this scenario		971	Below Capacity	This intersection won't be signalized under this scenario	
		PM			960	Below Capacity		

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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HCM Peak-Hour Arterial Analysis

Tables 7-7 to 7-8 display the peak-hour arterial analysis along SR 94 (Campo Road) between Via Mercado and Jefferson Road/Proctor Valley Road under Near Term (2015) with Project Conditions. As shown in the table, with the Proposed Project improvements, the analyzed roadway segment will operate at LOS C or better.

Appendix G contains the peak-hour arterial analysis worksheets.

HCM Peak-Hour Two-Lane Highway Analysis

With the completion of the project, new traffic signals will be installed at the following intersections:

- SR 94 (Campo Road) and Lyons Valley Road;
- SR 94 (Campo Road) and Melody Road; and
- SR 94 (Campo Road) and Reservation Road or Daisy Drive (Alternatives 1 and 2 only).

The installation of traffic signals at these locations will change the characteristics of the roadway operations between Proctor Valley Road and Otay Lakes Road making the HCM peak-hour two-lane highway analysis no longer applicable. With the installation of the traffic signals, this segment would operate as an arterial since traffic signals will be located within a 2 mile distance from each other. **Tables 7-9 and 7-10** show the results of the HCM Peak-Hour Arterial Analysis for the segment between Via Mercado and Melody Road. As shown in the Table, the results of the analysis show that SR 94 would operate at LOS C or better.

TABLE 7-7:
NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	NEAR TERM NO BUILD		NEAR TERM WITH PROPOSED PROJECT (ALT. 1-3)			
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)	Δ	SIGNIFICANT?
AM PEAK							
SR 94							
Via Mercado to Proctor Valley Rd	EB	45.2	A	44.2	A	-1.0	NO
	WB	35.5	B	36.1	B	0.6	NO
PM PEAK							
SR 94							
Via Mercado to Proctor Valley Rd	EB	24.6	**D**	33.0	C	8.4	NO
	WB	33.8	C	34.3	B	0.5	NO

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 7-8:
NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	NEAR TERM NO BUILD		NEAR TERM WITH PROPOSED			
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)	Δ	SIGNIFICANT?
FRIDAY PM							
SR 94							
Via Mercado to Proctor Valley Rd	EB	31.6	C	37.7	B	6.1	NO
	WB	34.6	B	34.7	B	0.1	NO
SATURDAY PM							
SR 94							
Via Mercado to Proctor Valley Rd	EB	44.9	A	44.1	A	-0.8	NO
	WB	39.0	B	38.6	B	-0.4	NO

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 7-9:
NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS TO MELODY RD (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	AM PEAK		PM PEAK	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Reservation Rd	EB	44.4	A	34.1	B
	WB	34.1	B	33.1	C

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 7-10:
NEAR TERM (2015) WITH PROPOSED PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS TO MELODY RD (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	FRIDAY		SATURDAY	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Reservation Rd	EB	37.3	B	44.5	A
	WB	34.1	B	38.8	B

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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8.0 HORIZON YEAR (2035) NO PROJECT CONDITIONS

This section provides a description of Horizon Year (2035) conditions without the Proposed Project.

Road Network

Per the County of San Diego's Mobility Element included in the approved General Plan, two roadway segment improvements were assumed to be completed under the Horizon Year (2035) conditions:

- Completion of Proctor Valley Road as a 2-lane light collector from Chula Vista city limits to SR 94; and
- Realignment of Otay Lakes Road with the intersection of Honey Springs Road to form a four-way intersection at SR 94.

Traffic Volumes

Chapter 2 provides a description of how the Horizon Year (2035) volumes were developed. **Figure 8-1** shows Horizon Year (2035) No Project peak-hour volumes for a typical weekday. **Figure 8-2** shows Horizon Year (2035) No Project volumes for typical Friday and Saturday afternoon peak-hours.

Intersection Analysis (HCM)

Tables 8-1 and 8-2 display the peak-hour LOS analysis results for the study intersections under Horizon Year (2035) No Project conditions. As shown in the table, the intersections would operate at LOS D or F during one or more peak-hours:

- SR 94 (Campo Road) & Via Mercado (LOS F all peak-hour periods analyzed);
- SR 94 (Campo Road) & Jamacha Boulevard (LOS F weekday and Friday p.m. peak-hour, and LOS D Saturday p.m. peak-hour);
- SR 94 (Campo Road) & Jamacha Road (LOS E weekday a.m. peak-hour, and LOS F weekday, Friday and Saturday p.m. peak-hours);
- SR 94 (Campo Road) & Cougar Canyon Road (LOS D weekday a.m. and p.m. peak-hours);
- SR 94 (Campo Road) & Steele Canyon Road (LOS D weekday a.m. peak-hour, and LOS F weekday and Friday p.m. peak-hours);
- SR 94 (Campo Road) & Lyons Valley Road (LOS F all peak-hour periods analyzed);
- SR 94 (Campo Road) & Jefferson Road (LOS F all peak-hour periods analyzed);
- SR 94 (Campo Road) & Maxfield Road (LOS D a.m. peak-hour period, and LOS F all other peak-hour periods analyzed);
- SR 94 (Campo Road) & Melody Road (LOS E weekday a.m. peak-hour, and LOS F weekday, Friday and Saturday p.m. peak-hours);
- SR 94 (Campo Road) & Reservation Road (LOS F all peak-hour periods analyzed); and
- SR 94 (Campo Road) & Otay Lakes Road (LOS D Friday peak-hour period)

Appendix E contains the intersection LOS calculation worksheets.

SR 94 Improvement Project

1

460 / 201	565 / 902	Via Mercado
⇦ 611 / 732	⇨ 2313 / 1836	SR 94
77 / 414	⇨	
1371 / 2776	⇨	

2

0 / 7	6 / 6	4 / 6
⇦ 14 / 8	⇦ 2214 / 1847	⇦ 565 / 570
13 / 7	⇨	
1431 / 2854	⇨	
207 / 416	⇨	
⇦ 543 / 372	⇧ 11 / 10	⇨ 587 / 776

3

38 / 62	22 / 29	27 / 111
⇦ 50 / 107	⇦ 1937 / 1719	⇦ 439 / 619
75 / 93	⇨	
1392 / 2949	⇨	
923 / 1466	⇨	
⇦ 1320 / 1094	⇧ 75 / 45	⇨ 673 / 608

4

440 / 188	122 / 101	
⇦ 299 / 50	⇦ 1125 / 1024	
390 / 163	⇨	
750 / 1574	⇨	

5

303 / 114	177 / 327	
⇦ 234 / 154	⇦ 1155 / 973	⇦ 4 / 8
137 / 129	⇨	
762 / 1532	⇨	
0 / 1	⇨	
⇦ 5 / 2	⇧ 2 / 3	⇨ 2 / 31

6

399 / 195	7 / 6	32 / 30
⇦ 21 / 46	⇦ 1020 / 910	⇦ 13 / 7
185 / 386	⇨	
724 / 1373	⇨	
7 / 9	⇨	
⇦ 12 / 6	⇧ 2 / 3	⇨ 12 / 17

7

180 / 249	365 / 337	97 / 78
⇦ 80 / 82	⇦ 664 / 596	⇦ 48 / 129
120 / 290	⇨	
544 / 899	⇨	
226 / 825	⇨	
⇦ 782 / 327	⇧ 365 / 335	⇨ 87 / 324

8

17 / 78	565 / 1070	
8 / 65	⇨	
6 / 33	⇨	
⇦ 6 / 15	⇧ 846 / 622	

9

34 / 35	439 / 818	55 / 59
⇦ 47 / 50	⇦ 6 / 7	
36 / 35	⇨	
0 / 13	⇨	
78 / 81	⇨	
⇦ 40 / 74	⇧ 579 / 527	⇨ 26 / 8

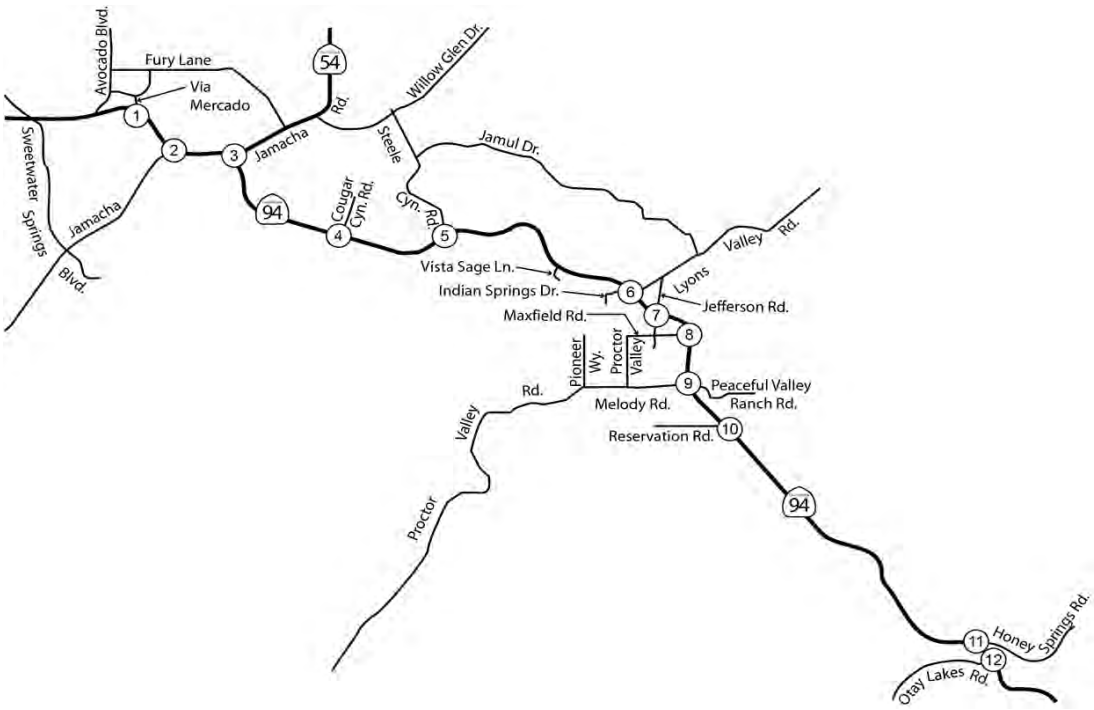
10

332 / 421	316 / 575	
141 / 373	⇨	
38 / 99	⇨	
⇦ 88 / 112	⇧ 443 / 234	

As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes Road and the intersection of SR-94

12

193 / 167	354 / 764	19 / 82
⇦ 70 / 37	⇦ 176 / 106	⇦ 20 / 12
131 / 219	⇨	
65 / 175	⇨	
167 / 254	⇨	
⇦ 239 / 171	⇧ 730 / 287	⇨ 7 / 19



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 8-1

Horizon Year (2035) No Project Peak-Hour Traffic Volumes (Weekday)

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SR 94 Improvement Project

1

304 / 241	911 / 730	Via Mercado
804 / 674	1766 / 1553	SR 94
334 / 186		
2251 / 1897		

2

3 / 8	5 / 7	9 / 6
Jamacha Blvd.		
6 / 42	2085 / 1922	660 / 563
SR 94		
10 / 109		
2690 / 2152		
418 / 347		
385 / 293	6 / 23	872 / 666

3

83 / 65	62 / 40	121 / 86
SR 94		Dwy.
123 / 77	1854 / 1678	642 / 510
Jamacha Rd.		
119 / 84		
2698 / 2179		
1192 / 911		
SR 94		
1074 / 1064	57 / 72	636 / 566

4

152 / 6	70 / 1	Cougar Canyon Rd.
48 / 4	940 / 954	SR 94
115 / 4		
1429 / 951		

5

123 / 78	7 / 3	360 / 222
Steele Canyon Rd.		
200 / 181	816 / 904	9 / 3
SR 94		
130 / 67		
1303 / 908		
1 / 0		
2 / 2	5 / 3	28 / 11

6

198 / 190	4 / 0	32 / 6
Lyons Valley Rd.		
38 / 56	865 / 901	13 / 13
SR 94		
348 / 192		
1400 / 1041		
15 / 7		
Indian Springs Dr.		
6 / 6	3 / 0	10 / 14

7

22 / 19	351 / 245	95 / 64
Jefferson Rd.		
72 / 66	661 / 724	122 / 122
SR 94		
28 / 18		
884 / 683		
890 / 609		
Proctor Valley Rd.		
387 / 371	331 / 186	411 / 233

8

40 / 19	1206 / 965	SR 94
Maxfield Rd.		
41 / 19		
28 / 16		
6 / 8	820 / 757	

9

26 / 31	965 / 720	13 / 13
Melody Rd.		SR 94
22 / 24		
16 / 6		
Peaceful Valley Ranch Rd.		
26 / 17		
91 / 95		
114 / 103	721 / 752	8 / 8

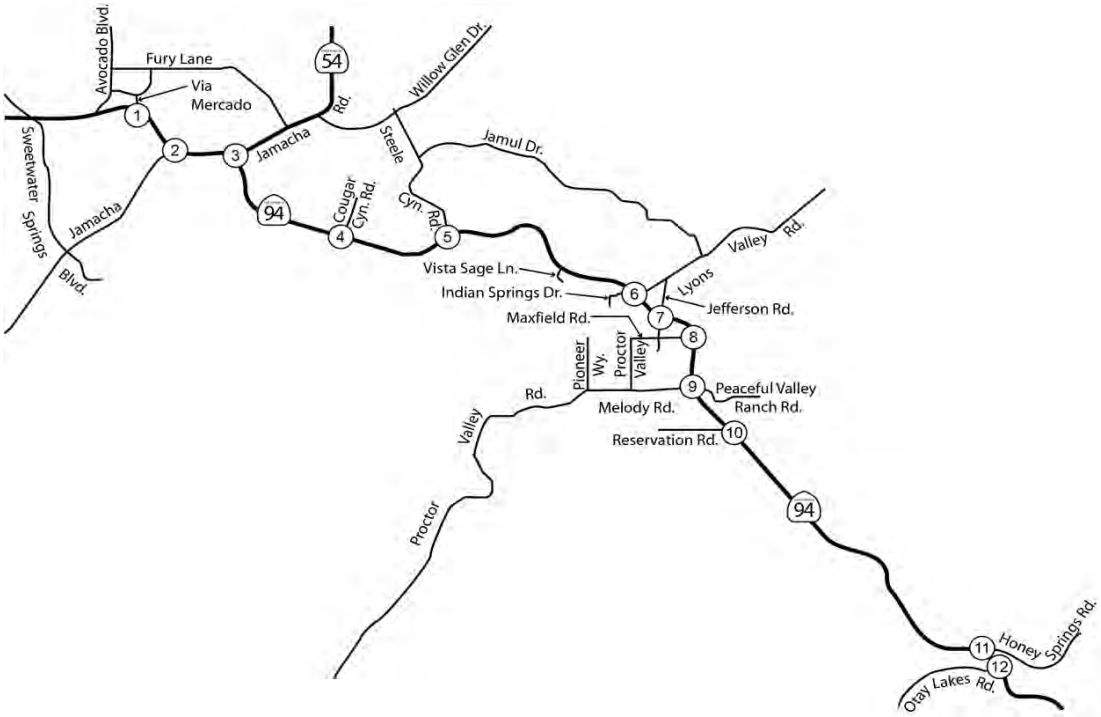
10

510 / 512	680 / 422	SR 94
Reservation Rd.		
597 / 597		
159 / 163		
135 / 136	195 / 229	

As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes Road and the intersection of SR-94

12

257 / 212	934 / 499	74 / 49
Otay Lakes Rd.		SR 94
28 / 39		
104 / 122		
12 / 14		
Honey Springs Rd.		
206 / 185		
168 / 113		
303 / 163		
142 / 134	262 / 336	19 / 13



Legend

X / Y = FRI / SAT PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 8-2

Horizon Year (2035) No Project Peak-Hour Traffic Volumes (Friday/Saturday)

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TABLE 8-1:
HORIZON YEAR (2035) NO PROJECT
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	HORIZON YEAR NO BUILD	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	AM	178.7	**F**
			PM	312.4	**F**
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	AM	29.6	C
			PM	84.5	**F**
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	AM	61.6	**E**
			PM	185.6	**F**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	AM	41.5	**D**
			PM	43.4	**D**
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	AM	50.9	**D**
			PM	124.4	**F**
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	AM	ECL	**F**
			PM	ECL	**F**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	AM	388.9	**F**
			PM	321.6	**F**
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	AM	26.7	**D**
			PM	217.9	**F**
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	AM	38.9	**E**
			PM	259.5	**F**
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	AM	87.1	**F**
			PM	ECL	**F**
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes.		
12	SR 94 (Campo Rd) & Otay Lakes Rd.	Signal	AM	20.1	C
			PM	30.4	C

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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TABLE 8-2:
HORIZON YEAR (2035) NO PROJECT
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	HORIZON YEAR NO BUILD	
				DELAY (a)	LOS (b)
1	SR 94 (Campo Rd) & Via Mercado	Signal	FRI PM	276.9	**F**
			SAT PM	146.5	**F**
2	Jamacha Blvd. & SR 94 (Campo Rd)	Signal	FRI PM	88.2	**F**
			SAT PM	36.6	**D**
3	SR 94 (Campo Rd) & Jamacha Rd.	Signal	FRI PM	160.3	**F**
			SAT PM	99.0	**F**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	Signal	FRI PM	23.9	C
			SAT PM	9.5	A
5	Steele Canyon Rd. & SR 94 (Campo Rd)	Signal	FRI PM	90.9	**F**
			SAT PM	31.5	C
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	Two-Way Stop	FRI PM	ECL	**F**
			SAT PM	1499.5	**F**
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	Signal	FRI PM	307.0	**F**
			SAT PM	140.5	**F**
8	SR 94 (Campo Rd) & Maxfield Rd.	One-Way Stop	FRI PM	256.7	**F**
			SAT PM	52.7	**F**
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	FRI PM	352.2	**F**
			SAT PM	62.7	**F**
10	SR 94 (Campo Rd) & Reservation Rd.	One-Way Stop	FRI PM	ECL	**F**
			SAT PM	ECL	**F**
11	SR 94 (Campo Rd) & Honey Springs Rd.	One-Way Stop	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes.		
12	SR 94 (Campo Rd) & Otay Lakes Rd.	Signal	FRI PM	39.3	**D**
			SAT PM	17.5	B

Notes:
Bold values indicate intersections operating at LOS D, E, or F.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

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Intersection Analysis (ILV)

Tables 8-3 and 8-4 display the ILV analysis results for the Caltrans-owned signalized intersections under Horizon Year (2035) No Project conditions for all peak-hours analyzed. As shown in the table, all intersections along SR 94 (Campo Road) would operate at above capacity during one or more peak-hours.

Appendix F contains the ILV worksheets.

HCM Peak-Hour Arterial Analysis

Tables 8-5 and 8-6 display the peak-hour arterial analysis along SR 94 (Campo Road) between Via Mercado and Jefferson Road/Proctor Valley Road under the Horizon Year (2035) No Project conditions. As shown in the tables, the roadway segment will operate at LOS D or E during the following peak-hour periods:

- Eastbound direction (LOS E Weekday and Friday p.m. peak-hours); and
- Westbound direction (LOS D Weekday a.m. and Saturday p.m., and LOS E Weekday and Friday p.m. peak-hour)

Appendix G contains the peak-hour arterial analysis worksheets.

HCM Peak-Hour Two-Lane Highway Analysis

Table 8-7 displays the peak-hour two-lane highway analysis along SR 94 (Campo Road) between Jefferson Road/Proctor Valley Road and Otay Lakes Road under Horizon Year (2035) No Project Conditions. As shown in the table, all roadway segments within the study area would function at LOS D or E.

Appendix H contains the two-way two-lane analysis worksheets.

TABLE 8-3:
HORIZON YEAR (2035) NO BUILD
ILV ANALYSIS (WEEKDAY)

INTERSECTION		PEAK HOUR	HORIZON YEAR	
			ILV TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	2104	**Above Capacity**
		PM	2600	**Above Capacity**
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	1061	Below Capacity
		PM	1739	**Above Capacity**
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1419	Approaching Capacity
		PM	1951	**Above Capacity**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1565	**Above Capacity**
		PM	1680	**Above Capacity**
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1604	**Above Capacity**
		PM	1904	**Above Capacity**
7	SR 94 (Campo Rd) & Jefferson Rd	AM	2098	**Above Capacity**
		PM	3678	**Above Capacity**

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 8-4:
HORIZON YEAR (2035) NO BUILD
ILV ANALYSIS (FRIDAY/SATURDAY)

INTERSECTION		PEAK HOUR	HORIZON YEAR	
			ILV TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	2540	**Above Capacity**
		SAT PM	2030	**Above Capacity**
2	SR 94 (Campo Rd) & Jamacha Blvd.	FRI PM	1781	**Above Capacity**
		SAT PM	1447	Approaching Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	2150	**Above Capacity**
		SAT PM	1600	**Above Capacity**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	1523	**Above Capacity**
		SAT PM	960	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	FRI PM	1715	**Above Capacity**
		SAT PM	1212	Approaching Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	FRI PM	3025	**Above Capacity**
		SAT PM	2204	**Above Capacity**

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 8-5:
HORIZON YEAR (2035) NO BUILD
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	AM PEAK		PM PEAK	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	33.8	C	16.6	**E**
	WB	24.8	**D**	17.8	**E**

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 8-6:
HORIZON YEAR (2035) NO PROJECT
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	FRIDAY		SATURDAY	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Proctor Valley Rd	EB	19.3	**E**	33.7	C
	WB	16.4	**E**	21.3	**D**

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segmeBO or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 8-7:
HORIZON YEAR (2035) NO PROJECT
TWO-LANE HIGHWAY SEGMENT ANALYSIS

HIGHWAY SEGMENT	PEAK HOUR	HORIZON YEAR		
		LOS (a)	Average Travel Speed (mph)	PTSF (b)
SR-94				
Proctor Valley Road to Melody Rd	Weekday AM	**E**	35.4	83.0%
	Weekday PM	**E**	30.7	90.1%
	Friday PM	**E**	29.6	91.3%
	Saturday PM	**E**	32.5	87.8%
Melody Rd to Project Driveway	Weekday AM	**D**	40.8	77.9%
	Weekday PM	**E**	38.0	84.3%
	Friday PM	**E**	34.8	88.7%
	Saturday PM	**E**	36.7	86.3%
Project Driveway to Otay Lakes Rd	Weekday AM	**E**	38.7	82.3%
	Weekday PM	**E**	38.3	83.3%
	Friday PM	**E**	36.6	86.1%
	Saturday PM	**D**	40.1	79.0%

Notes:
Bold values indicate intersections operating at LOS D, E or F.
(a) LOS is based on Average Travel Speed and Percent Time Spent Following per Chapter 12 of the 2000 Highway Capacity Manual.
(b) PTSF = Percent Time Spent Following

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9.0 HORIZON YEAR (2035) WITH PROJECT CONDITIONS

This section summarizes the operations of Horizon Year (2035) conditions with the addition of the roadway improvement projects. This analysis evaluates whether the Proposed Project's contribution to any significant impacts would be cumulatively considerable.

Road Network

Horizon Year (2035) Plus Project scenario was analyzed with the proposed intersection traffic control, striping, and roadway facility modifications described in Chapter 1. In addition, per the County of San Diego's Mobility Element included in the approved General Plan, two roadway segment improvements were assumed to be completed under the Horizon Year (2035) with Project conditions:

- Completion of Proctor Valley Road as a 2-lane light collector from Chula Vista city limits to SR 94; and
- Realignment of Otay Lakes Road with the intersection of Honey Springs Road to form a four-way intersection at SR 94.

Traffic Volumes

The Proposed Project would not generate any additional traffic; therefore Horizon Year (2035) Plus Project volumes would be the same as Horizon Year (2035) No Project conditions (**Figures 8-1** and **8-2**).

Figure 9-1 illustrates the Horizon Year (2035) with Project peak-hour traffic volumes at the study intersections for a typical weekday. **Figure 9-2** illustrates the Horizon Year (2035) with Project traffic volumes at the study intersections for typical Friday and Saturday peak-hour periods. **Figure 9-3** illustrates the Horizon Year (2035) with project peak-hour traffic volume adjustments needed for the evaluation of the Alternative 3 project scenario, where the JIV Gaming Project related traffic uses Melody Road to access the SR 94.

Intersection Analysis (HCM)

Tables 9-1 and 9-2 display the peak-hour LOS analysis results for the study intersections under Horizon Year (2035) with Project Alternatives 1-2 conditions. **Tables 9-3 and 9-4** display the peak-hour LOS analysis results for the study intersections under the Horizon Year (2035) with Project Alternatives 3 conditions for all peak-hour scenarios analyzed. As shown in the table, all intersections would operate at equal or better LOS than before project conditions with the exception of the following intersection:

- SR 94 (Campo Road) & Jamacha Boulevard (LOS E weekday a.m. peak-hour, LOS F weekday p.m. peak-hour, and LOS D Saturday p.m. peak-hour)

By changing the existing lane configuration for the northbound movement, the proposed improvement at this intersection would increase the overall delay at this intersection and would make a cumulatively considerable contribution to a significant traffic impact that would require mitigation.

Appendix E contains the intersections LOS calculation worksheets.

Intersection Analysis (ILV)

Table 9-5 and 9-6 displays the ILV analysis results for the Caltrans-owned signalized intersections under the Horizon Year (2035) Plus Project conditions for all peak-hours analyzed. As shown in the table, all existing signalized intersections will operate at equal or better operations than the Horizon Year (2035) No Project scenario with the exception of SR 94 & Jamacha Boulevard during the AM peak-hour (Approaching Capacity). The new traffic signal at SR 94 (Campo Road) and Lyons Valley Road will operate at above capacity. The new traffic signals at Melody Road, Reservation Road and Otay Lakes Road will operate at below or approaching capacity conditions.

Appendix F contains the ILV worksheets.

SR 94 Improvement Project

1

460 / 201	565 / 902	Via Mercado
611 / 732	2313 / 1836	SR 94
77 / 414		
1371 / 2776		

2

0 / 7	6 / 6	4 / 6
Jamacha Blvd.		
14 / 8	2214 / 1847	565 / 570
SR 94		
13 / 7		
1431 / 2854		
207 / 416		
543 / 372	11 / 10	587 / 776

3

38 / 62	22 / 29	27 / 111
SR 94	Dwy.	
50 / 107	1937 / 1719	439 / 619
Jamacha Rd.		
75 / 93		
1392 / 2949		
923 / 1466		
SR 94		
1320 / 1094	75 / 45	673 / 608

4

440 / 188	122 / 101	Cougar Canyon Rd.
299 / 50	1125 / 1024	SR 94
390 / 163		
750 / 1574		

5

303 / 114	177 / 327	Steele Canyon Rd.
234 / 154	1155 / 973	4 / 8
SR 94		
137 / 129		
762 / 1532		
0 / 1		
5 / 2	2 / 3	2 / 31

6

399 / 195	7 / 6	32 / 30
Lyons Valley Rd.		
21 / 46	1020 / 910	13 / 7
SR 94		
185 / 386		
724 / 1373		
7 / 9		
Indian Springs Dr.		
12 / 6	2 / 3	12 / 17

7

180 / 249	365 / 337	97 / 78
Jefferson Rd.		
80 / 82	664 / 596	48 / 129
SR 94		
120 / 290		
544 / 899		
226 / 825		
Proctor Valley Rd.		
782 / 327	365 / 335	87 / 324

8

17 / 78	565 / 1070	SR 94
Maxfield Rd.		
8 / 65		
6 / 33		
6 / 15	846 / 622	

9

34 / 35	439 / 818	55 / 59
SR 94		
Melody Rd.		
47 / 50		
6 / 7		
Peaceful Valley Ranch Rd.		
36 / 35		
0 / 13		
78 / 81		
40 / 74	579 / 527	26 / 8

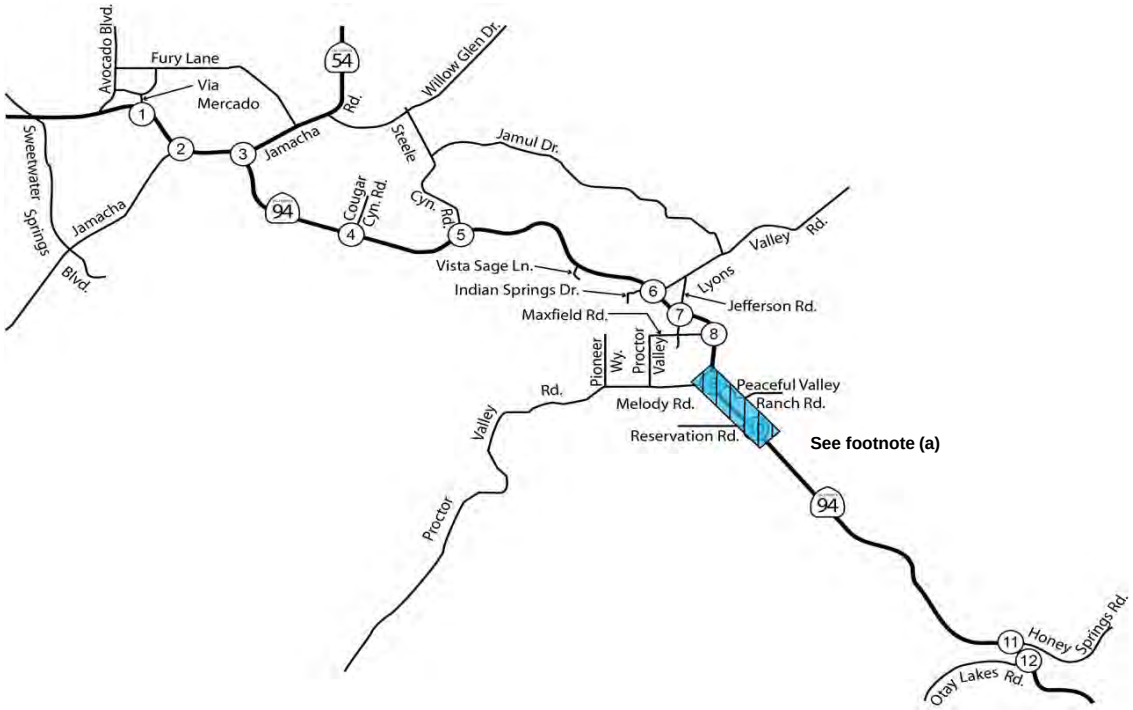
10

332 / 421	316 / 575	SR 94
Reservation Rd.		
141 / 373		
38 / 99		
88 / 112	443 / 234	

As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes Road and the intersection of SR-94

12

193 / 167	354 / 764	19 / 82
SR 94		
Otay Lakes Rd.		
70 / 37		
176 / 106		
20 / 12		
Honey Springs Rd.		
131 / 219		
65 / 175		
167 / 254		
239 / 171	730 / 287	7 / 19



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

(a) Volumes for Alternative 1 and 2 would remain the same. Please refer to Figure 9-3 for Alternative 3 traffic volumes.

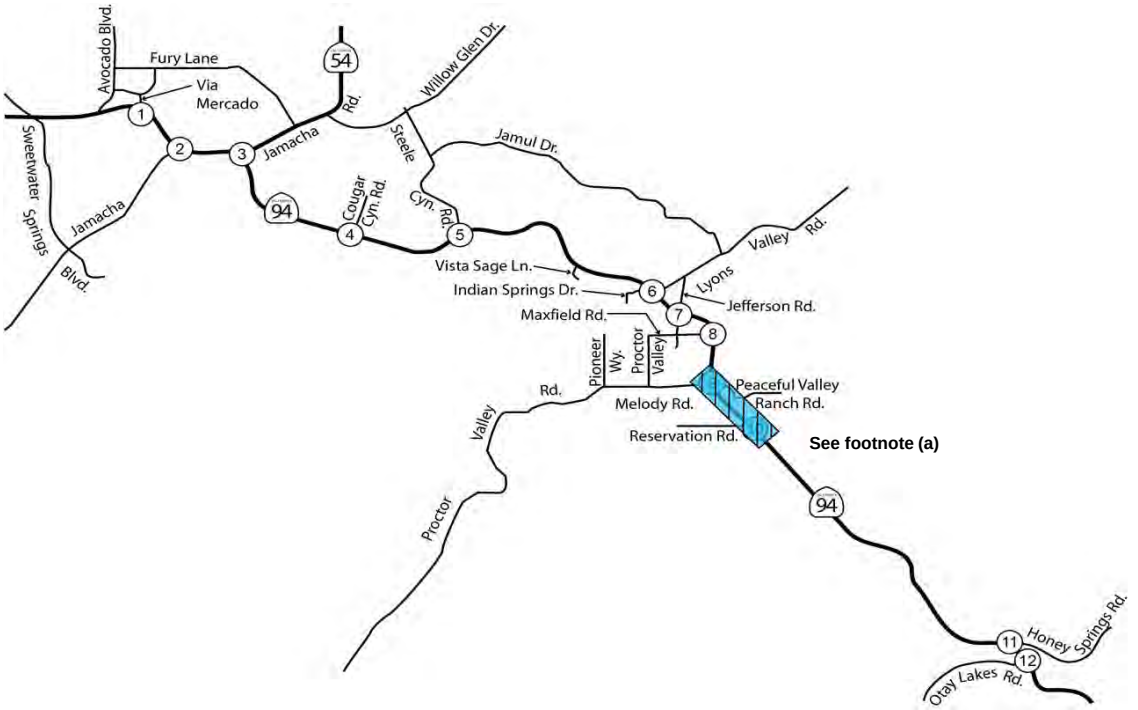
Kimley-Horn and Associates, Inc.

FIGURE 9-1

Horizon Year (2035) with Project (Alt 1-2) Peak-Hour Traffic Volumes (Weekday)

SR 94 Improvement Project

1 304 / 241 911 / 730 **Via Mercado** 804 / 674 1766 / 1553 **SR 94** 334 / 186 2251 / 1897	**2** 3 / 8 5 / 7 9 / 6 **Jamacha Blvd.** 6 / 42 2085 / 1922 660 / 563 **SR 94** 10 / 109 2690 / 2152 418 / 347 385 / 293 6 / 23 872 / 666	**3** 83 / 65 62 / 40 121 / 86 **Dwy.** 123 / 77 1854 / 1678 642 / 510 **SR 94** **Jamacha Rd.** 119 / 84 2698 / 2179 1192 / 911 **SR 94** 1074 / 1064 57 / 72 636 / 566	**4** 152 / 6 70 / 1 **Cougar Canyon Rd.** 48 / 4 940 / 954 **SR 94** 115 / 4.2 1429 / 951
5 123 / 78 7 / 3 360 / 222 **Steele Canyon Rd.** 200 / 181 816 / 904 9 / 3 **SR 94** 130 / 67 1303 / 908 1 / 0 2 / 2 5 / 3 28 / 11	**6** 198 / 190 4 / 0 32 / 6 **Lyons Valley Rd.** 38 / 56 865 / 901 13 / 13 **SR 94** 348 / 192 1400 / 1041 15 / 7 **Indian Springs Dr.** 6 / 6 3 / 0 10 / 14	**7** 22 / 19 351 / 245 95 / 64 **Jefferson Rd.** 72 / 66 661 / 724 122 / 122 **SR 94** 28 / 18 884 / 683 890 / 609 **Proctor Valley Rd.** 387 / 371 331 / 186 411 / 233	**8** 40 / 19 1206 / 965 **SR 94** **Maxfield Rd.** 41 / 19 28 / 16 6 / 8 820 / 757
9 26 / 31 965 / 720 13 / 13 **SR 94** **Melody Rd.** 22 / 24 16 / 6 **Peaceful Valley Ranch Rd.** 26 / 17 91 / 95 114 / 103 721 / 752 8 / 8	**10** 510 / 512 680 / 422 **SR 94** **Reservation Rd.** 597 / 597 159 / 163.2 135 / 136 195 / 229	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes Road and the intersection of SR-94	**12** 257 / 212 934 / 499 74 / 49 **SR 94** **Otay Lakes Rd.** 28 / 39 104 / 122 12 / 14 **Honey Springs Rd.** 206 / 185 168 / 112.5 303 / 163 142 / 134 262 / 336 19 / 13



Legend

X / Y = FRI / SAT PEAK HOUR TURNING VOLUMES

NOT TO SCALE

(a) Volumes for Alternative 1 and 2 would remain the same. Please refer to Figure 9-3 for Alternative 3 traffic volumes.

Kimley-Horn and Associates, Inc.

FIGURE 9-2

Horizon Year (2035) with Project (Alt 1-2) Peak-Hour Traffic Volumes (Friday/Saturday)

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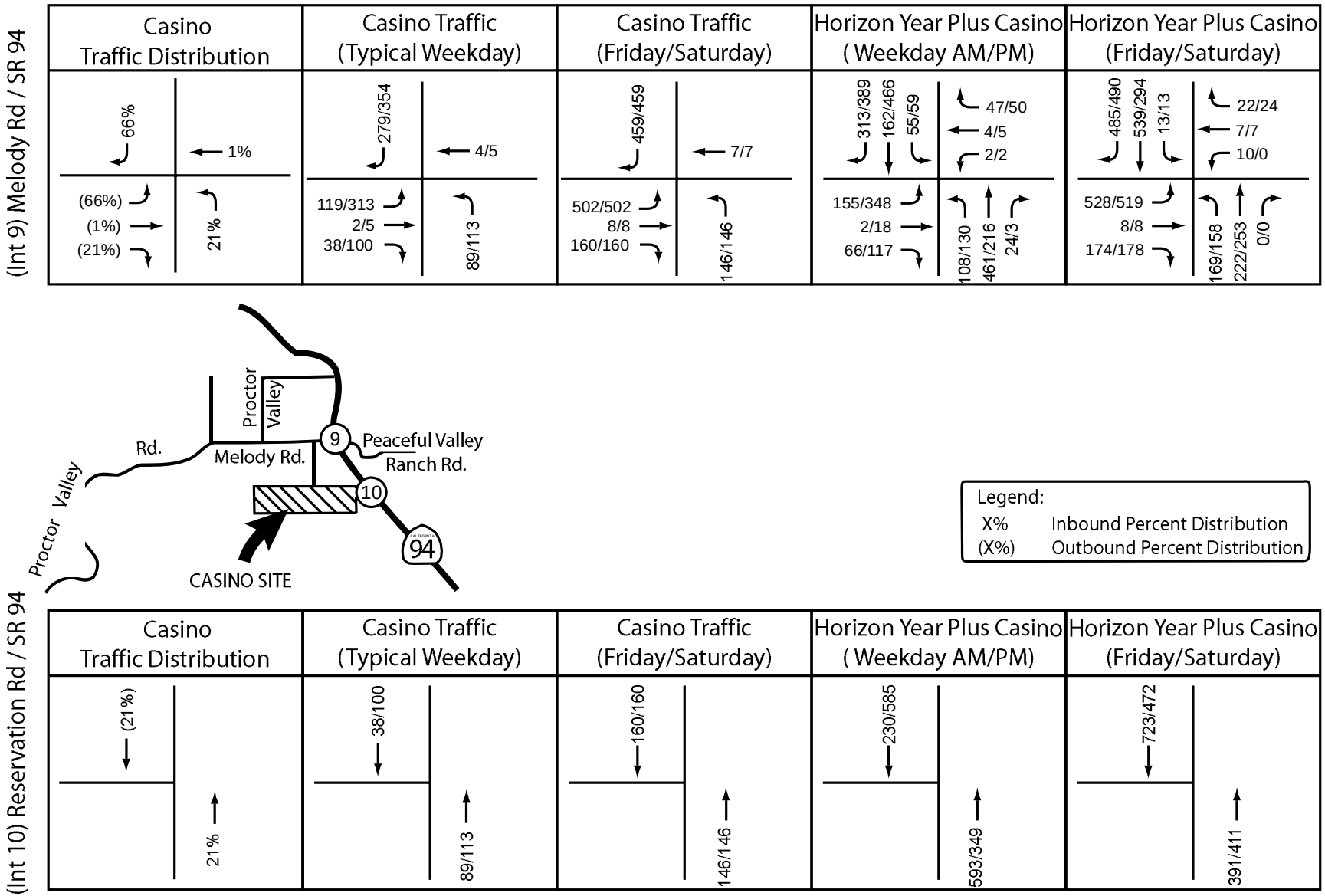

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FIGURE 9-3

Horizon Year (2035) with Project (Alt 3) Peak-Hour Volume Adjustments

TABLE 9-1:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-2)
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

	INTERSECTION	PEAK HOUR	HORIZON YEAR (2035) NO BUILD		HORIZON YEAR (2035) WITH PROJECT (ALT 1-2)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	AM	178.7	**F**	178.7	**F**	0.0	NO
		PM	312.4	**F**	312.4	**F**	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	AM	29.6	C	56.7	**E**	27.1	**YES**
		PM	84.5	**F**	87.6	**F**	3.1	**YES**
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	61.6	**E**	60.5	**E**	-1.1	NO
		PM	185.6	**F**	155.0	**F**	-30.6	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	41.5	**D**	41.5	**D**	0.0	NO
		PM	43.4	**D**	43.4	**D**	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	AM	50.9	**D**	25.6	C	-25.3	NO
		PM	124.4	**F**	31.4	C	-93.0	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	AM	ECL	**F**	37.2	**D**	-	NO
		PM	ECL	**F**	22.3	C	-	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	AM	388.9	**F**	388.9	**F**	0.0	NO
		PM	321.6	**F**	321.6	**F**	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	AM	26.7	**D**	15.0	C	-11.7	NO
		PM	217.9	**F**	31.9	**D**	-186.0	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	AM	38.9	**D**	12.8	B	-26.1	NO
		PM	259.5	**F**	16.0	B	-243.5	NO
10	SR 94 (Campo Rd) & Reservation Rd.	AM	87.1	**F**	4.8	A	-82.3	NO
		PM	ECL	**F**	7.8	A	-	NO
11	SR 94 (Campo Rd) & Honey Springs Rd.	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes.						
12	SR 94 (Campo Rd) & Otay Lakes Rd.	AM	20.1	C	20.1	C	0.0	NO
		PM	30.4	C	30.4	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 9-2:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-2)
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

	INTERSECTION	PEAK HOUR	HORIZON YEAR (2035) NO BUILD		HORIZON YEAR (2035) WITH PROJECT (ALT 1-2)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	276.9	**F**	276.9	**F**	0.0	NO
		SAT PM	146.5	**F**	146.5	**F**	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	FRI PM	88.2	**F**	85.7	**F**	-2.5	NO
		SAT PM	36.6	**D**	43.8	**D**	7.2	**YES**
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	160.3	**F**	143.4	**F**	-16.9	NO
		SAT PM	99.0	**F**	95.2	**F**	-3.8	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	23.9	C	23.9	C	0.0	NO
		SAT PM	9.5	A	9.5	A	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	FRI PM	90.9	**F**	31.2	C	-59.7	NO
		SAT PM	31.5	C	19.8	B	-11.7	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	FRI PM	ECL	**F**	18.3	B	-	NO
		SAT PM	1499.5	**F**	8.7	A	-1490.8	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	FRI PM	307.0	**F**	307.0	**F**	0.0	NO
		SAT PM	140.5	**F**	140.5	**F**	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	FRI PM	256.7	**F**	33.8	**D**	-222.9	NO
		SAT PM	52.7	**F**	20.7	C	-32.0	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	FRI PM	352.2	**F**	18.2	B	-334.0	NO
		SAT PM	62.7	**E**	12.1	B	-50.6	NO
10	SR 94 (Campo Rd) & Reservation Rd.	FRI PM	ECL	**F**	11.2	B	-	NO
		SAT PM	ECL	**F**	8.3	A	-	NO
11	SR 94 (Campo Rd) & Honey Springs Rd.	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes.						
12	SR 94 (Campo Rd) & Otay Lakes Rd.	FRI PM	39.3	**D**	39.3	**D**	0.0	NO
		SAT PM	17.5	B	17.5	B	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 9-3:
HORIZON YEAR (2035) WITH PROJECT (ALT 3)
PEAK-HOUR INTERSECTION LOS (WEEKDAY)

	INTERSECTION	PEAK HOUR	HORIZON YEAR (2035) NO BUILD		HORIZON YEAR (2035) WITH PROJECT (ALT 3)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	AM	178.7	**F**	178.7	**F**	0.0	NO
		PM	312.4	**F**	312.4	**F**	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	AM	29.6	C	56.7	**E**	27.1	**YES**
		PM	84.5	**F**	87.6	**F**	3.1	**YES**
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	61.6	**E**	60.5	**E**	-1.1	NO
		PM	185.6	**F**	155.0	**F**	-30.6	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	41.5	**D**	41.5	**D**	0.0	NO
		PM	43.4	**D**	43.4	**D**	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	AM	50.9	**D**	25.6	C	-25.3	NO
		PM	124.4	**F**	31.4	C	-93.0	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	AM	ECL	**F**	37.2	**D**	-	NO
		PM	ECL	**F**	22.3	C	-	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	AM	388.9	**F**	388.9	**F**	0.0	NO
		PM	321.6	**F**	321.6	**F**	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	AM	26.7	**D**	15.0	C	-11.7	NO
		PM	217.9	**F**	31.9	**D**	-186.0	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	AM	38.9	**D**	16.1	B	-22.8	NO
		PM	259.5	**F**	20.9	C	-238.6	NO
10	SR 94 (Campo Rd) & Reservation Rd.	AM	87.1	**F**	This intersection does not exist under this scenario.			
		PM	ECL	**F**				
11	SR 94 (Campo Rd) & Honey Springs Rd.	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes.						
12	SR 94 (Campo Rd) & Otay Lakes Rd.	AM	20.1	C	20.1	C	0.0	NO
		PM	30.4	C	30.4	C	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 9-4:
HORIZON YEAR (2035) WITH PROJECT (ALT 3)
PEAK-HOUR INTERSECTION LOS (FRIDAY/SATURDAY)

	INTERSECTION	PEAK HOUR	HORIZON YEAR (2035) NO BUILD		HORIZON YEAR (2035) WITH PROJECT (ALT 3)			
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
1	SR 94 (Campo Rd) & Via Mercado	FRI PM	276.9	**F**	276.9	**F**	0.0	NO
		SAT PM	146.5	**F**	146.5	**F**	0.0	NO
2	Jamacha Blvd. & SR 94 (Campo Rd)	FRI PM	88.2	**F**	85.7	**F**	-2.5	NO
		SAT PM	36.6	**D**	43.8	**D**	7.2	**YES**
3	SR 94 (Campo Rd) & Jamacha Rd.	FRI PM	160.3	**F**	143.4	**F**	-16.9	NO
		SAT PM	99.0	**F**	95.2	**F**	-3.8	NO
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	FRI PM	23.9	C	23.9	C	0.0	NO
		SAT PM	9.5	A	9.5	A	0.0	NO
5	Steele Canyon Rd. & SR 94 (Campo Rd)	FRI PM	90.9	**F**	31.2	C	-59.7	NO
		SAT PM	31.5	C	19.8	B	-11.7	NO
6	Indian Springs Dr./Lyons Valley Rd. & SR 94 (Campo Rd)	FRI PM	ECL	**F**	18.3	B	-	NO
		SAT PM	1499.5	**F**	8.7	A	-1490.8	NO
7	Proctor Valley Rd./Jefferson Rd. & SR 94 (Campo Rd)	FRI PM	307.0	**F**	307.0	**F**	0.0	NO
		SAT PM	140.5	**F**	140.5	**F**	0.0	NO
8	SR 94 (Campo Rd) & Maxfield Rd.	FRI PM	256.7	**F**	33.8	**D**	-222.9	NO
		SAT PM	52.7	**F**	20.7	C	-32.0	NO
9	SR 94 (Campo Rd) & Melody Rd./Peaceful Valley Ranch Rd.	FRI PM	352.2	**F**	22.2	C	-330.0	NO
		SAT PM	62.7	**E**	30.8	C	-31.9	NO
10	SR 94 (Campo Rd) & Reservation Rd.	FRI PM	ECL	**F**	This intersection does not exist under this scenario.			
		SAT PM	ECL	**F**				
11	SR 94 (Campo Rd) & Honey Springs Rd.	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes.						
12	SR 94 (Campo Rd) & Otay Lakes Rd.	FRI PM	39.3	**D**	39.3	**D**	0.0	NO
		SAT PM	17.5	B	17.5	B	0.0	NO

Notes:
Bold values indicate intersections operating at LOS D, E or F. **Bold and shaded** values indicate project significant impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 1500 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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TABLE 9-5:
HORIZON YEAR (2035) WITH PROJECT
ILV ANALYSIS (WEEKDAY)

INTERSECTION		PEAK HOUR	HORIZON YEAR (2035) NO BUILD		HORIZON YEAR (2035) PLUS PROJECT ALTERNATIVES 1 - 2		HORIZON YEAR (2035) PLUS PROJECT ALTERNATIVE 3	
			ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	2104	**Above Capacity**	2104	**Above Capacity**	2104	**Above Capacity**
		PM	2600	**Above Capacity**	2600	**Above Capacity**	2600	**Above Capacity**
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	1061	Below Capacity	1304	Approaching Capacity	1304	Approaching Capacity
		PM	1739	**Above Capacity**	1626	**Above Capacity**	1626	**Above Capacity**
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	1419	Approaching Capacity	1419	Approaching Capacity	1419	Approaching Capacity
		PM	1951	**Above Capacity**	1951	**Above Capacity**	1951	**Above Capacity**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1565	**Above Capacity**	1565	**Above Capacity**	1565	**Above Capacity**
		PM	1680	**Above Capacity**	1680	**Above Capacity**	1680	**Above Capacity**
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1604	**Above Capacity**	1144	Below Capacity	1144	Below Capacity
		PM	1904	**Above Capacity**	1138	Below Capacity	1138	Below Capacity
6	SR 94 (Campo Rd) & Lyons Valley Rd	AM	This intersection won't be signalized under this scenario		1625	**Above Capacity**	1625	**Above Capacity**
		PM			1584	**Above Capacity**	1584	**Above Capacity**
7	SR 94 (Campo Rd) & Jefferson Rd	AM	3025	**Above Capacity**	3025	**Above Capacity**	3025	**Above Capacity**
		PM	2204	**Above Capacity**	2204	**Above Capacity**	2204	**Above Capacity**
9	SR 94 (Campo Rd) & Melody Rd	AM	This intersection won't be signalized under this scenario		774	Below Capacity	671	Below Capacity
		PM			1056	Below Capacity	762	Below Capacity
10	SR 94 (Campo Rd) & Reservation Rd or Daisy Drive	AM	This intersection won't be signalized under this scenario		514	Below Capacity	This intersection won't be signalized under this scenario	
		PM			874	Below Capacity		
12	SR 94 (Campo Rd) & Otay Lakes Rd	AM	This intersection won't be signalized under this scenario		1002	Below Capacity	1002	Below Capacity
		PM			1189	Below Capacity	1189	Below Capacity

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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TABLE 9-6:
HORIZON YEAR (2035) WITH PROJECT
ILV ANALYSIS (FRIDAY/SATURDAY)

INTERSECTION		PEAK HOUR	HORIZON YEAR (2035) NO BUILD		HORIZON YEAR (2035) PLUS PROJECT ALTERNATIVES 1 - 2		HORIZON YEAR (2035) PLUS PROJECT ALTERNATIVE 3	
			ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY	ILV/HR TOTAL	CAPACITY
1	SR 94 (Campo Rd) & Via Mercado	AM	2540	**Above Capacity**	2540	**Above Capacity**	2540	**Above Capacity**
		PM	2030	**Above Capacity**	2030	**Above Capacity**	2030	**Above Capacity**
2	SR 94 (Campo Rd) & Jamacha Blvd.	AM	1781	**Above Capacity**	1550	**Above Capacity**	1550	**Above Capacity**
		PM	1447	Approaching Capacity	1327	Approaching Capacity	1327	Approaching Capacity
3	SR 94 (Campo Rd) & Jamacha Rd.	AM	2150	**Above Capacity**	2150	**Above Capacity**	2150	**Above Capacity**
		PM	1600	**Above Capacity**	1600	**Above Capacity**	1600	**Above Capacity**
4	SR 94 (Campo Rd) & Cougar Canyon Rd.	AM	1523	**Above Capacity**	1523	**Above Capacity**	1523	**Above Capacity**
		PM	960	Below Capacity	960	Below Capacity	960	Below Capacity
5	SR 94 (Campo Rd) & Steele Canyon Rd.	AM	1715	**Above Capacity**	1063	Below Capacity	1063	Below Capacity
		PM	1212	Approaching Capacity	851	Below Capacity	851	Below Capacity
6	SR 94 (Campo Rd) & Lyons Valley Rd	AM	This intersection won't be signalized under this scenario		1626	**Above Capacity**	1626	Above Capacity
		PM			1339	Approaching Capacity	1339	Approaching Capacity
7	SR 94 (Campo Rd) & Jefferson Rd	AM	3025	**Above Capacity**	3025	**Above Capacity**	3025	**Above Capacity**
		PM	2204	**Above Capacity**	2204	**Above Capacity**	2204	**Above Capacity**
9	SR 94 (Campo Rd) & Melody Rd	AM	This intersection won't be signalized under this scenario		1222	Approaching Capacity	873	Approaching Capacity
		PM			975	Below Capacity	860	Below Capacity
10	SR 94 (Campo Rd) & Reservation Rd or Daisy Drive	AM	This intersection won't be signalized under this scenario		1114	Below Capacity	This intersection won't be signalized under this scenario	
		PM			947	Below Capacity		
12	SR 94 (Campo Rd) & Otay Lakes Rd	AM	This intersection won't be signalized under this scenario		1379	Approaching Capacity	1379	Approaching Capacity
		PM			818	Below Capacity	818	Below Capacity

Notes:
<1200 = Below Capacity, 1201 - 1500 = Approaching Capacity, >1500 = Above Capacity
Bold values indicate intersections operating above capacity.

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HCM Peak-Hour Arterial Analysis

Tables 9-7 thru 9-8 display the peak-hour arterial analysis along SR 94 (Campo Road) between Via Mercado and Jefferson Road/Proctor Valley Road under Horizon Year (2035) with Project Conditions. As shown in the table, with the exception of the eastbound direction during the morning peak-hour period, SR 94 (Campo Road) will operate at better than before project conditions during all peak-hour periods analyzed. Although overall vehicular traffic speed would decrease during the morning peak-hour period in the eastbound direction, the corridor will operate at LOS C, which is an acceptable LOS for Caltrans.

Appendix G contains the peak-hour arterial analysis worksheets.

HCM Peak-Hour Two-Lane Highway Analysis

With the completion of the project, new traffic signals will be installed at the following intersections:

- SR 94 (Campo Road) and Lyons Valley Road;
- SR 94 (Campo Road) and Melody Road; and
- SR 94 (Campo Road) and Reservation Road or Daisy Drive (Alternatives 1 and 2 only).

The installation of traffic signals at these locations will change the characteristics of the roadway operations between Proctor Valley Road and Otay Lakes Road making the HCM peak-hour two-lane highway analysis no longer applicable. With the installation of the traffic signals, this segment would operate as an arterial since traffic signals will be located within a 2 mile distance from each other. **Tables 9-9 and 9-10** show the results of the HCM Peak-Hour Arterial Analysis for the segment between Via Mercado and Melody Road. As shown in the Table, the results of the analysis show that during the weekdays, the eastbound movement would operate at LOS D or better and operate at LOS E in the westbound direction. During the weekend p.m. peak hour periods, arterial speeds on Friday would operate at LOS E or better and LOS D or better on Saturday.

TABLE 9-7:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	HORIZON YEAR NO BUILD		HORIZON YEAR WITH PROJECT (ALT 1-3)			
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)	Δ	SIGNIFICANT?
AM PEAK							
SR 94							
Via Mercado to Proctor Valley Rd	EB	33.8	C	33.5	C	-0.3	NO
	WB	24.8	**D**	25.2	**D**	0.4	NO
PM PEAK							
SR 94							
Via Mercado to Proctor Valley Rd	EB	16.6	**E**	21.8	**D**	5.2	NO
	WB	17.8	**E**	18.0	**E**	0.2	NO

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 9-8:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	HORIZON YEAR NO BUILD		HORIZON YEAR WITH PROJECT (ALT 1-3)			
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)	Δ	SIGNIFICANT?
FRIDAY PM							
SR 94							
Via Mercado to Proctor Valley Rd	EB	19.3	**E**	23.1	**D**	3.8	NO
	WB	16.4	**E**	16.6	**E**	0.2	NO
SATURDAY PM							
SR 94							
Via Mercado to Proctor Valley Rd	EB	33.7	C	34.1	B	0.4	NO
	WB	21.3	**D**	21.7	**D**	0.4	NO

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 9-9:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS TO MELODY RD (WEEKDAY)

ROADWAY SEGMENT	DIRECTION	AM PEAK		PM PEAK	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Reservation Rd	EB	35.0	B	23.6	**D**
	WB	20.1	**E**	17.2	**E**

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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TABLE 9-10:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-3)
PEAK-HOUR ARTERIAL SEGMENT ANALYSIS TO MELODY RD (FRIDAY/SATURDAY)

ROADWAY SEGMENT	DIRECTION	FRIDAY		SATURDAY	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
SR 94					
Via Mercado to Reservation Rd	EB	24.6	**D**	34.7	B
	WB	17.3	**E**	22.0	**D**

Notes:

(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).

(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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Recommended Mitigation Measures

As shown in Tables 9-1 thru 9-4, the Proposed Project would make a cumulatively considerable contribution to a significant traffic impact at the intersection of SR 94 (Campo Road) and Jamacha Boulevard. To mitigate its cumulative traffic related impact, the project will make a monetary contribution toward the installation of an exclusive northbound left-turn lane and necessary roadway widening and signal modification.

Table 9-11 displays the mitigated peak-hour LOS summary at the intersection of SR 94 (Campo Road) and Jamacha Boulevard under the Horizon Year (2035) with Project Conditions. As shown in the Table, with the proposed improvements, the intersection would operate at better than before project conditions or at acceptable LOS.

Appendix E contains the intersection LOS worksheets.

TABLE 9-11:
HORIZON YEAR (2035) WITH PROJECT MITIGATION
PEAK-HOUR INTERSECTION LOS SUMMARY

INTERSECTION		PEAK HOUR	HORIZON YEAR (2035) WITH PROJECT		HORIZON YEAR (2035) WITH PROJECT WITH MITIGATION	
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)
2	Jamacha Blvd. & SR 94 (Campo Rd)	AM	56.7	**E**	30.5	C
		PM	87.6	**F**	65.9	**E**
2	Jamacha Blvd. & SR 94 (Campo Rd)	FRI PM	85.7	**F**	63.0	**E**
		SAT PM	43.8	**D**	33.0	C

Notes:
Bold values indicate intersections operating at LOS D, E or F.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0
(c) Change in delay due to addition of project traffic

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10.0 OPERATION ANALYSIS

This section of the report provides additional operation analysis for the different project Alternatives along SR 94 (Campo Road) between the area west of Melody Road to just east of Reservation Road. This section includes a signal warrant evaluation and a queuing analysis.

Signal Warrant Analysis

The project includes the signalization of the following three intersections:

- SR 94 (Campo Road) & Lyon Valley Road (All Alternatives);
- SR 94 (Campo Road) & Melody Road (All Alternatives); and
- SR 94 (Campo Road) & Reservation Road (Alternatives 1 and 2 only)

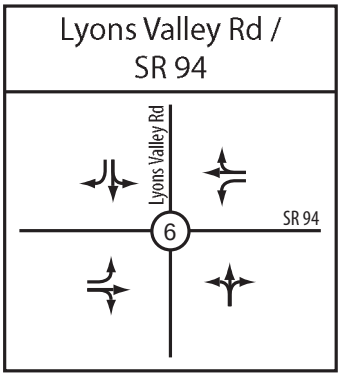
A signal warrant analysis was conducted using the Existing Baseline with JIV Gaming Project Traffic with Project peak-hour volumes. Peak-hour warrant guidelines can be found in the 2012 Edition of the California Manual on Uniform Traffic Control Devices (CA-MUTCD) under Section 4C.04, Warrant 3. For these intersections, SR 94 (Campo Road) is the major street and Melody Road and/or Reservation Road are the minor streets. As previously mentioned, SR 94 (Campo Road) has a posted speed limit of 55 miles per hour. Because the speed limit on the major street exceeds 40 miles per hour, Figure 4C-4 in the CA-MUTCD can be used to evaluate the signal warrant criteria.

In order for these intersections to warrant a traffic signal installation, a point representing the vehicles per hour on SR 94 (Campo Road) (total of both approaches) and the corresponding vehicles per hour on minor street approaches (one direction only) for one hour of a typical day must be plotted on the CA-MUTCD Figure 4C-4 graph and that point must be above the curve representing the 1 lane in each direction of traffic.

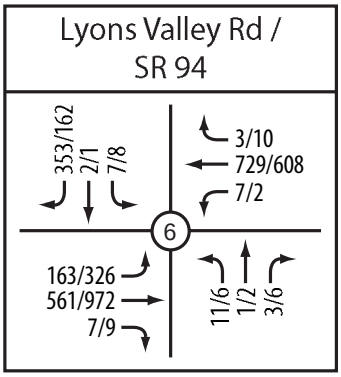
In **Figure 10-1**, the Existing Baseline with JIV Gaming Project Traffic with project peak-hours volumes were plotted on the CA-MUTCD Figure 4C-4 graph for the intersection of SR 94 (Campo Road) and Lyons Valley Road. The warrant analysis indicates that a traffic signal is warranted at this intersection during all the peak-hour periods analyzed.

In **Figure 10-2**, the Existing Baseline with JIV Gaming Project Traffic with project peak-hours volumes were plotted on the CA-MUTCD Figure 4C-4 graph for the intersection of SR 94 (Campo Road) and Melody Road. As shown in the figure, the warrant analysis indicates that a traffic signal is not warranted at this intersection during any of the peak-hour periods analyzed. As shown in **Figure 10-3**, when the Horizon Year (2035) with Project peak-hour volumes are plotted in the graph, the figure shows that a traffic signal will be warranted at this location.

In **Figure 10-4**, the Existing Baseline with JIV Gaming Project Traffic with project peak-hours volumes were plotted on the CA-MUTCD Figure 4C-4 graph for the intersection of SR 94 (Campo Road) and Reservation Road. As shown in the figure, the warrant analysis indicates that a traffic signal is warranted at this intersection during any of the peak-hour periods analyzed.



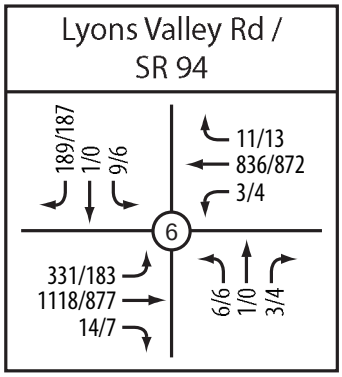
With Project Geometrics



Existing + Casino Weekday Peak-Hour Volumes (AM/PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **1470 / 1927** VPH

Minor Street: Lyons Valley Rd
Volume (one approach): **362 / 171** VPH

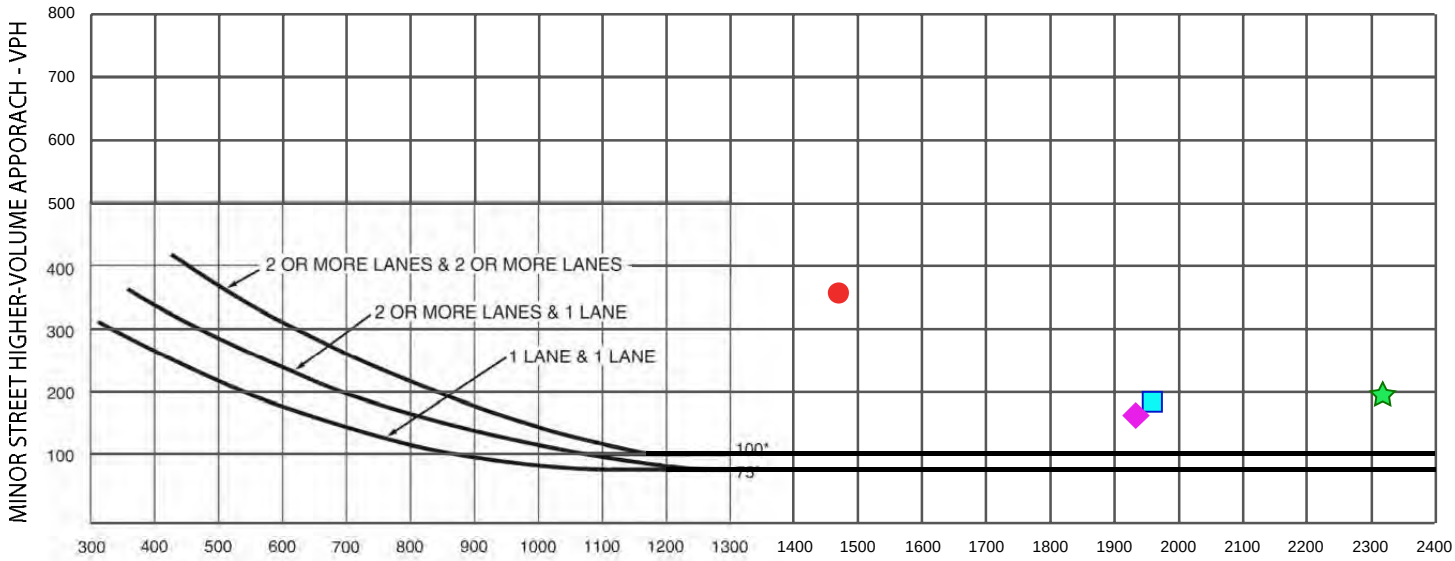


Existing + Casino Friday/Saturday Peak-Hour Volumes (Fri PM/Sat PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **2313 / 1956** VPH

Minor Street: Lyons Valley Rd
Volume (one approach): **199 / 193** VPH

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

- Weekday AM Peak
- Weekday PM Peak
- Friday PM Peak
- Saturday PM Peak

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FIGURE 10-1

SR 94 (Campo Road) & Lyons Valley Road Traffic Signal Warrant

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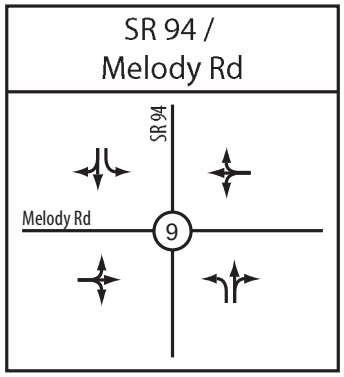
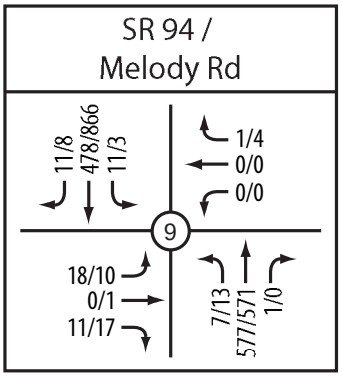


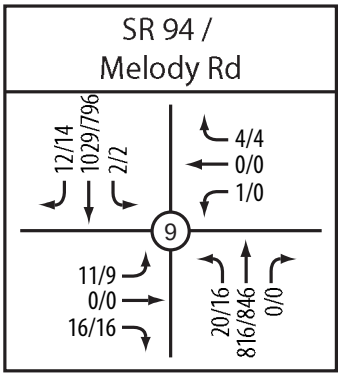
With Project Geometrics



Existing + Casino Weekday Peak-Hour Volumes (AM/PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **1085 / 1461** VPH

Minor Street: Melody Rd
Volume (one approach): **29 / 28** VPH

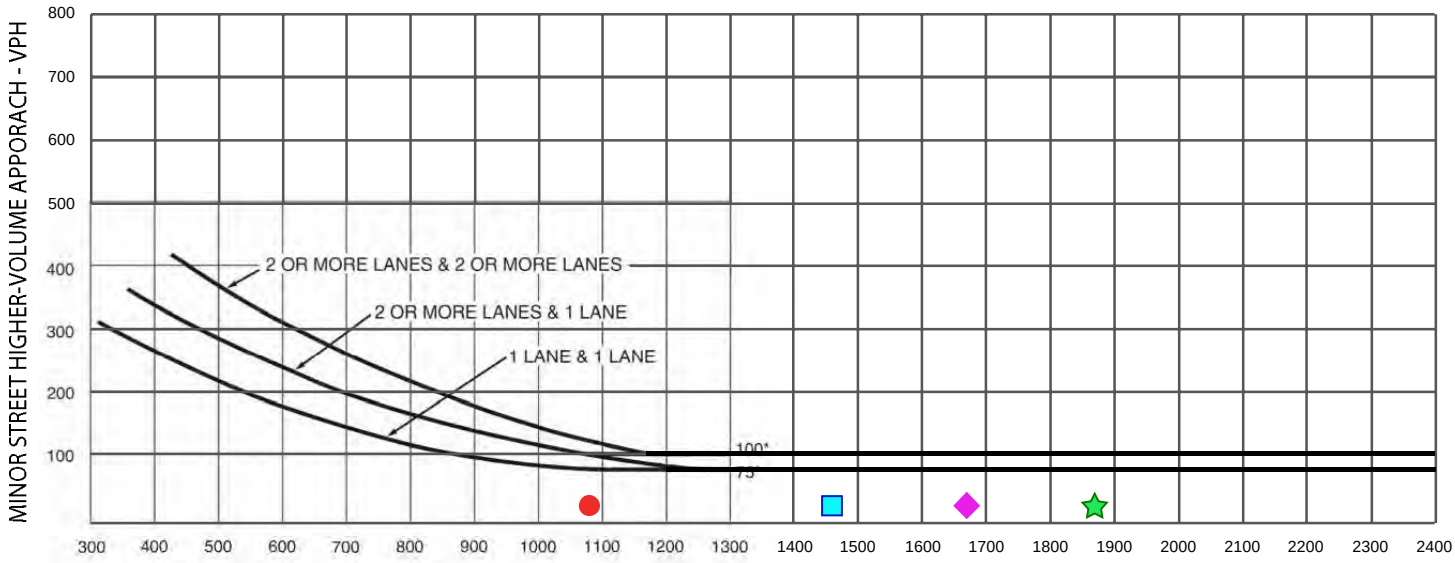


Existing + Casino Friday/Saturday Peak-Hour Volumes (Fri PM/Sat PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **1877 / 1674** VPH

Minor Street: Melody Rd
Volume (one approach): **27/ 25** VPH

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

- Weekday AM Peak
- Weekday PM Peak
- Friday PM Peak
- Saturday PM Peak

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FIGURE 10-2

SR 94 (Campo Road) & Melody Road Traffic Signal Warrant

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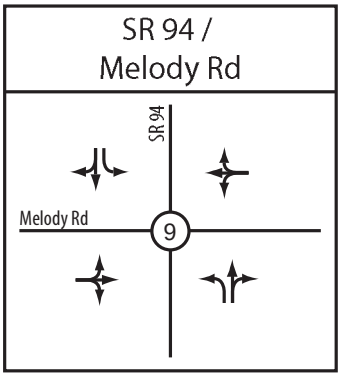
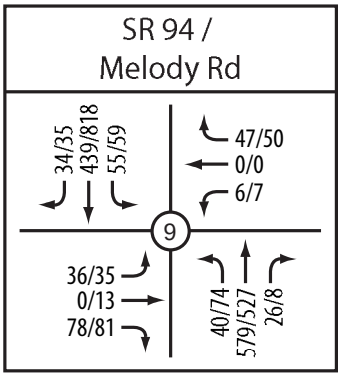


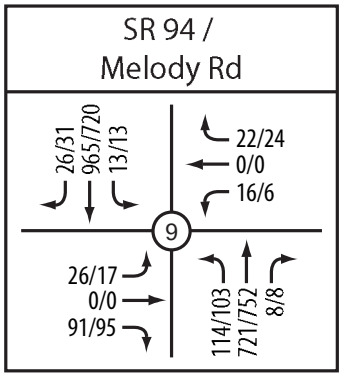
With Project Geometrics



Horizon Year (Year 2035) Weekday Peak-Hour Volumes (AM/PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **1173 / 1521** VPH

Minor Street: Melody Rd
Volume (one approach): **114 / 129** VPH

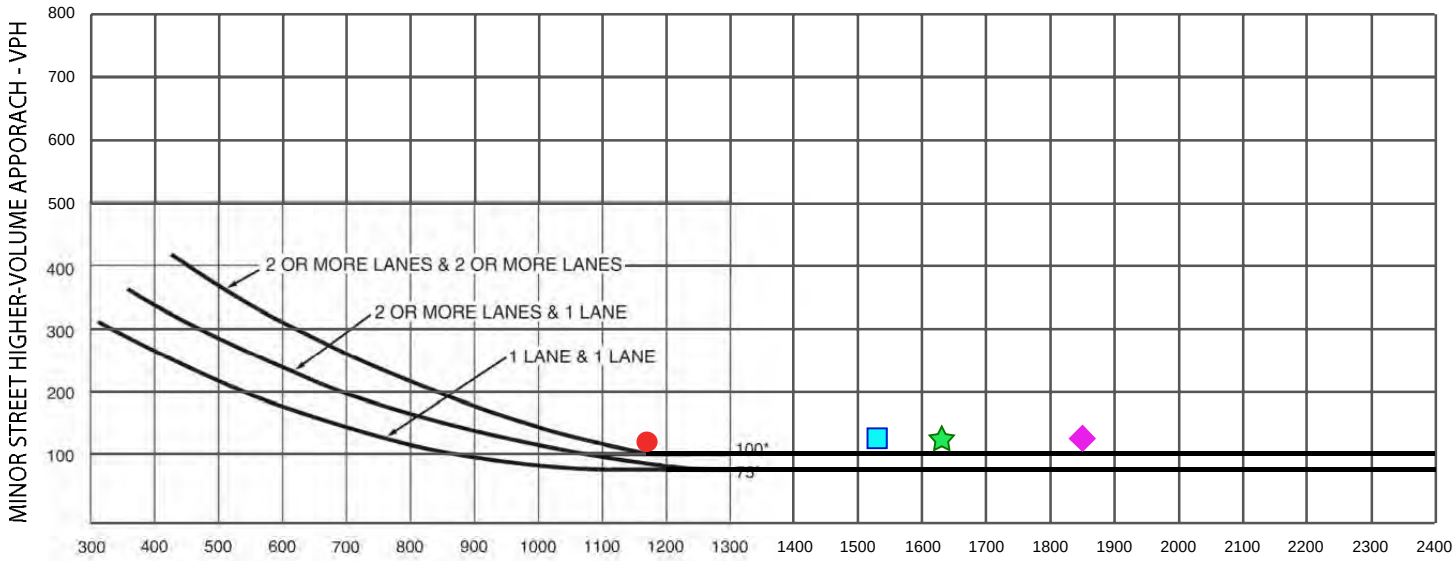


Horizon Year (Year 2035) Friday/Saturday Peak-Hour Volumes (Fri PM/Sat PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **1847 / 1627** VPH

Minor Street: Melody Rd
Volume (one approach): **117/ 112** VPH

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

- Weekday AM Peak
- Weekday PM Peak
- Friday PM Peak
- Saturday PM Peak

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FIGURE 10-3

SR 94 (Campo Road) & Melody Road Traffic Signal Warrant

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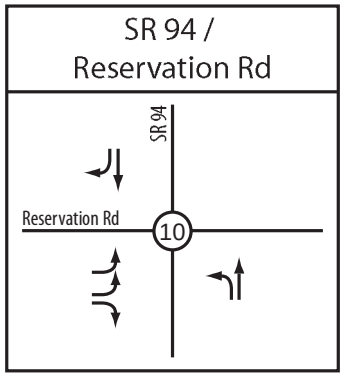
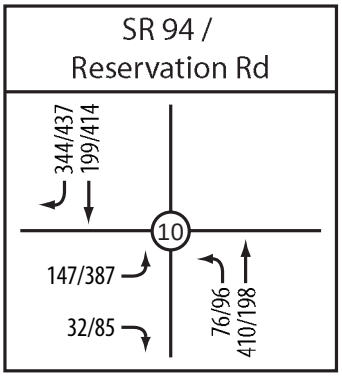


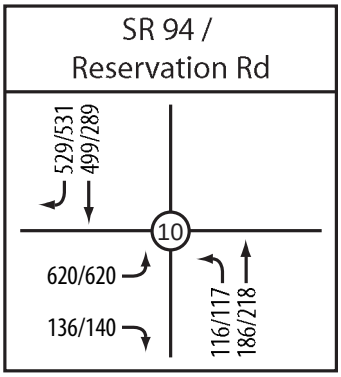
With Project Geometrics



Existing + Casino Weekday Peak-Hour Volumes (AM/PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **1029 / 1145** VPH

Minor Street: Reservation Rd
Volume (one approach): **179 / 472** VPH

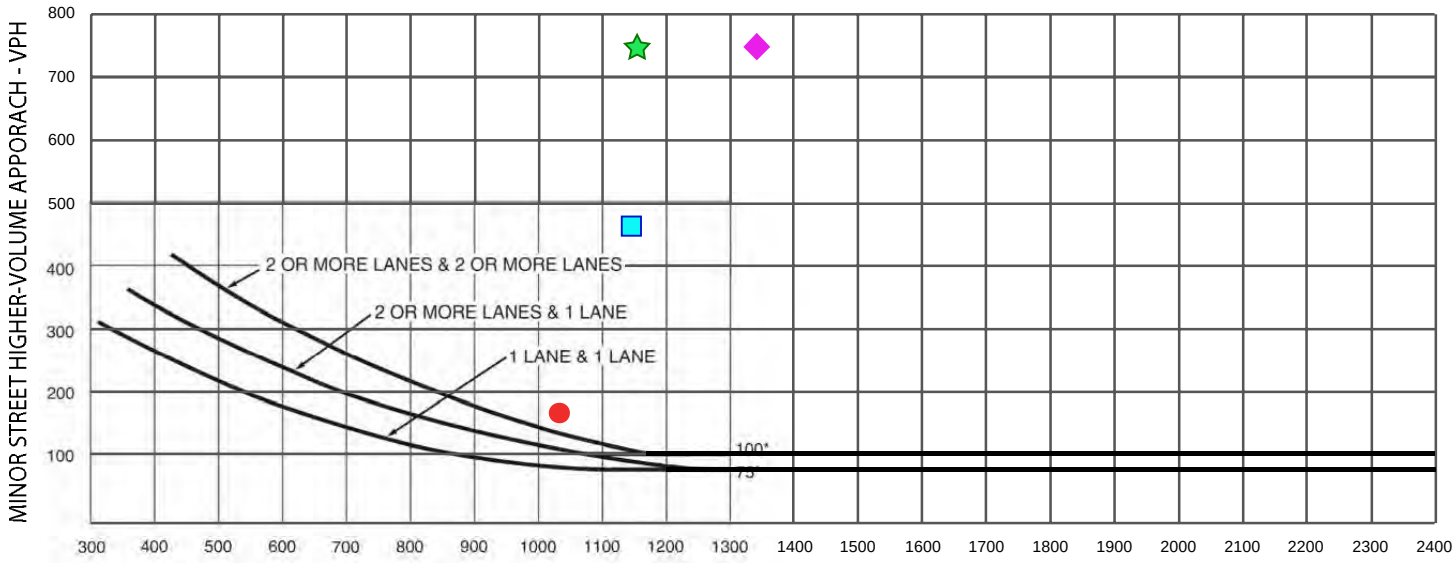


Existing + Casino Friday/Saturday Peak-Hour Volumes (Fri PM/Sat PM)

Major Street: SR 94 (55 MPH)
Volume (both approaches): **1330 / 1155** VPH

Minor Street: Reservation Rd
Volume (one approach): **756 / 760** VPH

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

- Weekday AM Peak
- Weekday PM Peak
- Friday PM Peak
- Saturday PM Peak

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FIGURE 10-4

SR 94 (Campo Road) & Reservation Road Traffic Signal Warrant

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Queuing Analysis

A queuing analysis was conducted at the intersection of SR 94 (Campo Road) and Melody Road and SR 94 (Campo Road) and Reservation Road (or Daisy Drive). The purpose of this analysis was to document the differences between each of the Proposed Project Alternatives with respect to queuing. **Tables 10-1 10-2** display the estimated traffic queues at these intersections, using the Synchro 8.0 software package, for the 2035 Horizon Year with Project conditions. All queues are expressed as the 50th and 95th percentile queue. The 95th percentile queue is often used to determine the design length of turn pockets. The 95th percentile represents the queues that would be expected to be exceeded only 5 percent of the time.

As shown in the tables, it is expected that all anticipated queues will be accommodated with the proposed storage lengths.

Construction Traffic

As part of the Proposed Project, a Traffic Management Plan (TMP) will be prepared. This TMP will be prepared in conformance with the Department's District 11 Transportation Management Plan Guidelines, dated February 1, 2006 and Deputy Directives 60 and 64.

The goal of this TMP will be to identify a program for preventing traffic congestion and accidents during construction of the proposed improvements along State Route 94 (SR 94). The TMP program is based on the effective application of traditional traffic handling practices and an innovative combination of public and motorist, bicyclist, and pedestrian information, incident management, and strategies for construction, demand management, and alternative routes. It is anticipated that the following list of strategies will be included in the TMP document:

- Public Information
  - Public Awareness Campaign (PAC)
- Motorist Information Strategies
  - Portable Changeable Message Signs (PCMS)
  - Ground Mounted Signs
  - Caltrans Highway Information Network (CHIN)
  - SANDAG's 5-1-1 Traffic Service
- Incident Management
  - Construction Zone Enhanced Enforcement Program (COZEEP)
  - Traffic Management Team (TMT)
- Construction Strategies
  - Project Phasing
  - Lane Closure Charts
  - Lane Modifications
  - Off-peak/Night/Weekend Work
  - Speed Limit Reduction

TABLE 10-1:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-3) QUEUING SUMMARY (WEEKDAY)

INTERSECTION		DIR	AVAILABLE STORAGE	YEAR 2035 WITH PROJECT CONDITIONS			
				AM PEAK		PM PEAK	
				QUEUE 50TH	QUEUE 95TH	QUEUE 50TH	QUEUE 95TH
ALTERNATIVE 1							
9	SR 94 & Melody Rd./Peaceful Valley Ranch Rd.	EBT	1000 ft	1 ft	31 ft	10 ft	42 ft
		WBT	325 ft		8 ft		9 ft
		NBL	540 ft	6 ft	30 ft	17 ft	**59 ft**
		NBT	> 750 ft	54 ft	**306 ft**	51 ft	**271 ft**
		SBL	450 ft	9 ft	38 ft	13 ft	41 ft
		SBT	650 ft	37 ft	**213 ft**	**265 ft**	**493 ft**
10	SR 94 & Reservation Rd.	EBL	300 ft	12 ft	31 ft	42 ft	71 ft
		EBR	300 ft		16 ft		25 ft
		NBL	550 ft	18 ft	**69 ft**	29 ft	**104 ft**
		NBT	> 750 ft	41 ft	91 ft	25 ft	65 ft
		SBT	> 750 ft	50 ft	105 ft	131 ft	**332 ft**
		SBR	> 750 ft		35 ft		46 ft
ALTERNATIVE 2							
9	SR 94 & Melody Rd./Peaceful Valley Ranch Rd.	EBT	1000 ft	1 ft	31 ft	10 ft	42 ft
		WBT	325 ft		8 ft		9 ft
		NBL	660 ft	6 ft	30 ft	17 ft	59 ft
		NBT	> 750 ft	54 ft	306 ft	51 ft	271 ft
		SBL	410 ft	9 ft	38 ft	13 ft	41 ft
		SBT	650 ft	37 ft	213 ft	265 ft	493 ft
10	SR 94 & Daisy Rd.	EBL	300 ft	12 ft	31 ft	42 ft	71 ft
		EBR	300 ft		16 ft		25 ft
		NBL	680 ft	18 ft	69 ft	29 ft	104 ft
		NBT	> 750 ft	41 ft	91 ft	25 ft	65 ft
		SBT	> 750 ft	50 ft	105 ft	131 ft	332 ft
		SBR	> 750 ft		35 ft		46 ft
ALTERNATIVE 3							
9	SR 94 & Melody Rd./Peaceful Valley Ranch Rd.	EBL	200 ft	22 ft	45 ft	54 ft	92 ft
		EBT	640 ft	1 ft	28 ft	5 ft	42 ft
		WBT	325 ft	2 ft	27 ft	2 ft	31 ft
		NBL	515 ft	17 ft	39 ft	22 ft	60 ft
		NBT	> 750 ft	138 ft	332 ft	58 ft	132 ft
		SBL	400 ft	17 ft	57 ft	20 ft	71 ft
		SBT	650 ft	37 ft	85 ft	148 ft	366 ft
		SBR	370 ft		47 ft		59 ft

Notes:
EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound; L = left turn; T = through movement; R = right turn
Bold values indicate queues that could be longer.
(a) Queues length were calculated using Synchro 8.0 software.

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TABLE 10-2:
HORIZON YEAR (2035) WITH PROJECT (ALT 1-3) QUEUING SUMMARY (FRIDAY/SATURDAY)

INTERSECTION		DIR	AVAILABLE STORAGE	YEAR 2035 WITH PROJECT CONDITIONS			
				FRI PM PEAK		SAT PM PEAK	
				QUEUE 50TH	QUEUE 95TH	QUEUE 50TH	QUEUE 95TH
ALTERNATIVE 1							
9	SR 94 & Melody Rd./Peaceful Valley Ranch Rd.	EBT	1000 ft	2 ft	32 ft	1 ft	30 ft
		WBT	325 ft		2 ft		
		NBL	540 ft	26 ft	93 ft	23 ft	**82 ft**
		NBT	> 750 ft	75 ft	**391 ft**	79 ft	**408 ft**
		SBL	450 ft	3 ft	15 ft	3 ft	14 ft
		SBT	650 ft	329 ft	**565 ft**	**170 ft**	**402 ft**
10	SR 94 & Reservation Rd.	EBL	300 ft	74 ft	115 ft	74 ft	115 ft
		EBR	300 ft		30 ft		31 ft
		NBL	550 ft	41 ft	**131 ft**	41 ft	**132 ft**
		NBT	> 750 ft	28 ft	59 ft	33 ft	69 ft
		SBT	> 750 ft	247 ft	430 ft	379 ft	**593 ft**
		SBR	> 750 ft		53 ft		
ALTERNATIVE 2							
9	SR 94 & Melody Rd./Peaceful Valley Ranch Rd.	EBT	1000 ft	2 ft	32 ft	1 ft	30 ft
		WBT	325 ft		2 ft		
		NBL	660 ft	26 ft	93 ft	23 ft	82 ft
		NBT	> 750 ft	75 ft	391 ft	79 ft	408 ft
		SBL	410 ft	3 ft	15 ft	3 ft	14 ft
		SBT	650 ft	329 ft	565 ft	170 ft	402 ft
10	SR 94 & Daisy Rd.	EBL	300 ft	74 ft	115 ft	74 ft	115 ft
		EBR	300 ft		30 ft		31 ft
		NBL	680 ft	41 ft	131 ft	41 ft	132 ft
		NBT	> 750 ft	28 ft	59 ft	33 ft	69 ft
		SBT	> 750 ft	247 ft	430 ft	379 ft	593 ft
		SBR	> 750 ft		53 ft		
ALTERNATIVE 3							
9	SR 94 & Melody Rd./Peaceful Valley Ranch Rd.	EBL	200 ft	64 ft	140 ft	111 ft	161 ft
		EBT	640 ft	2 ft	44 ft	3 ft	50 ft
		WBT	325 ft	5 ft	30 ft	3 ft	23 ft
		NBL	515 ft	25 ft	83 ft	37 ft	89 ft
		NBT	> 750 ft	32 ft	133 ft	103 ft	176 ft
		SBL	400 ft	4 ft	20 ft	6 ft	22 ft
		SBT	650 ft	145 ft	436 ft	124 ft	233 ft
		SBR	370 ft		64 ft		75 ft

Notes:
EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound; L = left turn; T = through movement; R = right turn
Bold values indicate queues that could be longer.
(a) Queues length were calculated using Synchro 8.0 software.

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11.0 FINDINGS AND RECOMMENDATIONS

The results of the traffic study analysis have determined the traffic impacts from the proposed SR 94 Improvement Project. The following summarize the key findings and conclusions of the analysis. The Proposed Project is the construction of access road improvements on State Route 94 (SR-94) associated to the Jamul Indian Village (JIV) Gaming Project and five off-site mitigation measures per the certified *Jamul Indian Village Final Tribal EE*, dated January 2013.

Summary of Findings and Recommendations

The JIV is proposing three build alternatives adjacent to their property along SR-94 to access the future gaming facility. In addition to the access road improvements, the JIV also proposes to improve five intersections along SR-94 to address anticipated traffic generated from their future gaming facility. The five intersection improvements will be a project feature of all the access road alternatives. The intersections to be improved include:

6. SR94/Jamacha Boulevard Intersection: Restripe the northbound left-turn lane to a northbound through shared left-turn lane and restripe the northbound through shared left-turn lane to a northbound right-turn lane (including required traffic signal modifications). The proposed improvements would affect Jamacha Boulevard, which is within the County.

7. SR94/Jamacha Road Intersection: Add a second eastbound right-turn lane and retaining wall (including required traffic signal modifications). The right-turn lane would extend beyond the existing Caltrans ROW. Modify northbound striping on Jamacha Road to have the left through-lane lead directly into the left-turn lanes.

8. SR94/Steele Canyon Road Intersection: Add a second eastbound and westbound through lane. Install traffic signal equipment, such as detection system, conduits and pullboxes. Two of the approaches are within the County ROW.

9. SR94/Lyons Valley Road Intersection: Install a traffic signal. Traffic signal equipment, such as detection system, conduits and pullboxes would have to be installed within the County's ROW.

10. SR94/Maxfield Road Intersection: Restripe the northbound approaches along SR94 to include an acceleration lane. This improvement will also include the widening of SR94 north of Maxfield Road necessary to accommodate additional acceleration lane.

Alternative 1: Reservation Road Access

Alternative 1 proposes improvements to SR-94 from approximately 1,200 feet north of Melody Road to approximately 1,800 feet south of Reservation Road, for a total length of approximately 0.9 miles. The alignment of SR-94 is realigned to provide flatter horizontal and vertical curvature, as well as pavement cross slope and superelevation me K:\SND_TPTO\095848001 - JIV Design\Reports\Traffic Report\TIA-CEQA\PDFeting current design standards. Lanes and shoulders are widened where necessary to also meet current standards.

New traffic signals would be installed for Alternative 1 at the intersection of SR-94/Melody Road, and also at the intersection of SR-94/Reservation Road, which is the proposed JIV access location for Alternative 1. Exclusive left-turn lanes would be provided along SR-94 for the north to west move onto

Melody Road, and the south to east move onto Peaceful Valley Ranch Road. Likewise, an exclusive left-turn lane would be provided for the north to west move onto Reservation Road. In addition, a second southbound through lane would be provided along SR-94 between Melody Road and Reservation Road. Alternative 1 also widens Melody Road and Peaceful Valley Ranch Road to provide exclusive left-turn lanes onto SR-94 for overall improved intersection operation. The length of improvements along Melody Road and Peaceful Valley Ranch Road are approximately 700 feet and 500 feet, respectively. The intersection of SR-94/Reservation Road is also reconfigured with Alternative 1 to provide an intersection angle which meets current design standards. Retaining walls are proposed for Alternative 1 in order to minimize ROW requirements and environmental impacts. The five previously stated SR-94 intersection improvements apply to Alternative 1.

Alternative 2: Four-Acre Access (Daisy Drive)

Alternative 2 proposes improvements along SR-94 from an area north of Melody Road to an area south of the JIV property. Three options using the same entrance are addressed under Alternative 2. While maintaining the same entrance, each of these options contains separate ROW requirements. The JIV access driveway for Alternative 2 is located approximately 500 feet north of existing Reservation Road, at "Daisy Drive." Locating the access point at Daisy Drive decreases the intersection spacing to Melody Road, but shortens the project limits at the southern end. The Alternative 2 realignment of SR-94 maintains an alignment on the west side of existing SR-94, south of Daisy Drive, which results in one less horizontal curve along SR-94 within the project limits.

<u>Alternative 2: Option 1 (Full Disturbed Area)</u>
Option 1 proposes to improve SR-94 from approximately 1,200 feet north of Melody Road to approximately 1,400 feet south of existing Reservation Road, for a total length of approximately 0.8 miles. Similar to Alternative 1, SR-94 is realigned and widened as part of Option 1 to improve traffic operations. No design exceptions are needed for Option 1.

Proposed traffic signals and exclusive left-turn lanes for Alternative 2: Option 1 are the same as for Alternative 1, except the traffic signal for access to the JIV Gaming Project is provided at Daisy Drive instead of Reservation Road. In Addition, Option 1 would provide an additional northbound lane along SR-94 between Daisy Drive and Peaceful Valley Ranch Road to accommodate the expected dual left-turn lanes departing from the access driveway at Daisy Drive. Improvements to Melody Road and Peaceful Valley Ranch Road are the same for Alternatives 1 and 2: Option 1. Retaining walls associated with Alternative 2: Option 1 are reduced when compared to Alternative 1. The five previously stated SR-94 intersection improvements apply to Alternative 2: Option 1.

<u>Alternative 2: Option 2 (Reduced Disturbed Area)</u>

Option 2 proposes to improve SR-94 from about 1200 feet north of Melody Road to about 1400 feet south of existing Reservation Road, for a total length of approximately 0.8 miles. The project limits north and south along SR-94 are the same as stated for Alternative 2: Option 1. Alternative 2: Option 2 differs from Option 1 in that ROW impacts are reduced within private property and environmentally sensitive areas. The Option 2 centerline alignment for SR-94 is shifted to the west through the intersection with Melody Road with the use of a reduced radius, and a broken-back curve (two curves with a short tangent deflecting in the same direction) is introduced between Melody Road and the proposed access driveway at Daisy Drive. The introduction of a reduced radius and broken-back horizontal curvature helps facilitate the reduced ROW impact associated with Option 2.

Proposed traffic signals and left-turn lanes are the same as stated for Alternative 2: Option 1, with the exception that no exclusive left-turn lane is proposed on the departure from Peaceful Valley Ranch Road for Option 2. In addition, the alignment for Melody Road, as well as for Peaceful Valley Ranch Road, is shifted to the north with Option 2 to further reduce ROW impact to environmentally sensitive areas. Alternative 2: Option 2 requires various retaining walls and fill walls to reduce the proposed footprint. The five previously discussed SR-94 intersection improvements apply to Alternative 2: Option 2.

Alternative 2: Option 3 (Minimum Disturbed Area)

Option 3 proposes to provide access to the JIV Gaming Project via Daisy Drive, the same as for Alternatives 2: Options 1 and 2. Alternative 2: Option 3, however, minimizes ROW impacts with the implementation of non-standard geometric elements requiring mandatory exceptions to Caltrans design standards. Reduced design speed from 55 mph to 45 mph, reduction in horizontal curvature, reduced shoulder width, reduced stopping sight distance along vertical curvature, increased maximum grade, and reduced superelevation rate are all incorporated to minimize impacts to ROW.

Improvements for Alternative 2: Option 3 begin approximately 800 feet north of Melody Road and continue to about 400 feet south of existing Reservation Road, for a total length of approximately 0.6 miles. Proposed traffic signals and exclusive left-turn lanes are the same for Options 2 and 3, except no left-turn is provided on the departure from Peaceful Valley Ranch Road. Lane widths are reduced along Melody Road in order to accommodate the roadway widening while minimizing ROW impacts. Unlike Alternative 2: Option2 which realigned Melody Road to the south, Alternative 2: Option 3 retains the existing southern edge of traveled way and widens Melody Road to the north. One fill-wall and three cut-walls are proposed along SR-94 for Option 3. No walls are proposed along Melody Road. The five previously discussed SR-94 intersection improvements apply to Alternative 2: Option 3.

Alternative 3: Melody Road Access

Alternative 3 provides access to the JIV Gaming Project via a proposed access driveway from Melody Road south to the JIV property. Therefore, no driveway improvements are proposed at either Reservation Road or Daisy Drive with this alternative. A wider footprint is necessary at the intersection of SR-94/Melody Road with this alternative in order to accommodate the necessary intersection improvements. In contrast to the other alternatives, Alternative 3 requires an additional northbound through lane north of Melody Road to accommodate a second exclusive left-turn lane proposed from Melody Road. A second exclusive left-turn lane is also required for the north to west move from SR-94 to Melody Road. A second through lane is also needed for westbound Melody Road leading to the proposed access driveway.

The proposed centerline alignment for SR-94 for Alternative 3 is relatively the same as proposed for Alternative 2: Option 1. However, the extent of improvement along both SR-94 and Melody Road are different when compared to the other alternatives. The difference is related to the access driveway location. Alternative 3 improvements begin approximately 1300 feet north of Melody Road and continue to about 900 feet south of existing Reservation Road, for a total length of approximately 0.8 miles. The length of improvements along Melody Road is increased from about 750 feet to about 1300 feet with Alternative 3. Traffic signals are proposed at the intersection of SR-94/Melody Road, and also at the driveway access location along Melody Road. A driveway would continue from the new intersection at Melody Road and the driveway access and continue on private property south to the future gaming facility. This driveway would require a combination of cut/fill and retaining walls along its length. The five previously discussed SR-94 intersection improvements apply to Alternative 3.

Alternative 4: No Build Alternative

No roadway improvements would be constructed under the No Build Alternative.

The following list summarizes the results of the analyses and recommendations:

- The Proposed Project would not have a significant traffic related impact at the study intersections and roadway segments under the Existing and Near Term (2015) Conditions.

- Under the Horizon Year (2035) Conditions, the Proposed Project would have a cumulatively significant impact at the intersection of SR 94 and Jamacha Boulevard. To mitigate its cumulative traffic related impact, the project will make a monetary contribution toward the installation of an exclusive northbound left-turn lane and necessary roadway widening and signal modification.

APPENDICES

APPENDIX A

- Proposed Roadway Improvements

GENERAL NOTES

1. ALL STRIPING AND SIGNING SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE FOLLOWING MANUALS:

DESCRIPTION	EDITION
STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (THE "GREENBOOK")	2012
CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD)	2012
SAN DIEGO COUNTY DESIGN STANDARDS	2012

2. ALL SIGNING AND STRIPING IS SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER PRIOR TO INSTALLATION AND/OR REMOVAL.
3. INSTALLATION OF ALL STRIPING, SIGNS, AND PAVEMENT MARKERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING, PAVEMENT MARKINGS, AND LEGENDS BY SANDBLASTING AND/OR GRINDING WITH THE SEAL. ANY DEBRIS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
5. CONTRACTOR SHALL REPLACE ANY STRIPING, PAVEMENT MARKERS, OR LEGENDS OBLITERATED BY CONSTRUCTION.
6. CONTRACTOR SHALL REMOVE ALL REDUNDANT STRIPING.
7. SIGN POSTS SHALL BE INSTALLED WITH ALUMINUM ALLOY 6063–T6, CLEAR ANODIZED POST PER SAN DIEGO COUNTY DESIGN STANDARD DRAWING NO. DS–13C.
8. ALL RAISED MEDIAN NOSES SHALL BE PAINTED YELLOW.
9. ALL EXISTING SIGNS SHOWN ON THE STRIPING AND SIGNING PLANS SHALL REMAIN UNLESS OTHERWISE NOTED. NEW SIGNS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR, EXCEPT FOR EXISTING SIGNS SPECIFICALLY INDICATED TO BE RELOCATED.
10. STRIPED CROSSWALKS SHALL HAVE AN INSIDE DIMENSION OF 10 FEET UNLESS INDICATED OTHERWISE.
11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS (EXCEPT WITHIN BIKE LANES) SHALL BE THERMOPLASTIC.
12. CONTRACTOR SHALL LAYOUT ALL INTERIM AND FINAL STRIPING, PAVEMENT MARKERS, AND SIGN PLACEMENT. LAYOUT SHALL BE INSPECTED BY THE ENGINEER PRIOR TO INSTALLATION.
13. THE CONTRACTOR SHALL NOTIFY THE COUNTY TRAFFIC ENGINEER A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO AND UPON COMPLETION OF STRIPING AND SIGNING TO SCHEDULE A FINAL INSPECTION.
14. ALL REFERENCES TO THE "COUNTY" SHALL EXPLICITLY REFER TO THE "COUNTY OF SAN DIEGO."
15. CONTRACTOR SHALL SUBMIT PRODUCT MANUALS AND SPECIFICATIONS FOR THERMOPLASTIC MATERIALS AT THE PRE–CONSTRUCTION MEETING FOR APPROVAL BY THE PROJECT ENGINEER.
16. CONTRACTOR SHALL REMOVE ALL CONFLICTING RAISED PAVEMENT MARKERS PRIOR TO STRIPING. PAVEMENT THAT IS DAMAGED DUE TO THE REMOVAL OF MARKERS SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE PROJECT ENGINEER.
17. SURFACES WHICH ARE TO RECEIVE NEW STRIPING, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL BE CLEANED OF ALL DIRTY AND LOOSE MATERIALS PRIOR TO INSTALLATION.
18. ALL TRAFFIC STRIPES 6 INCHES OR LESS IN WIDTH SHALL BE INSTALLED WITH TWO COATS OF PAINT. THE FIRST COAT OF PAINT SHALL BE DRY BEFORE APPLICATION OF THE SECOND COAT PER THE LATEST STANDARD SPECIFICATION.
19. FOR ALL ROADWAY CENTERLINES REQUIRING DOUBLE YELLOW TRAFFIC STRIPING, THE CONTRACTOR SHALL CONCURRENTLY PAINT A 3–INCH WIDE BLACK STRIPE BETWEEN THE TWO 4–INCH WIDE YELLOW STRIPES.
20. ALL LIMIT LINES/STOP BARS SHALL BE LOCATED AT THE PROLONGATION OF THE CENTER DELTA OF THE CURB RETURN OR BEHIND THE PEDESTRIAN ACCESS RAMP, UNLESS OTHERWISE SPECIFIED. IF A STRIPED CROSSWALK EXISTS, THE LIMIT LINE/STOP BAR SHALL BE LOCATED 4 FEET IN ADVANCE OF THE CROSSWALK.
21. ALL STRIPING SHALL BEGIN AND TERMINATE AT QUARTER DELTA OF THE CURB, OR BACK OF THE LIMIT LINE/STOP BAR, UNLESS OTHERWISE SPECIFIED.
22. "STOP" PAVEMENT MARKINGS SHALL BE INSTALLED 8 FEET IN ADVANCE OF THE LIMIT LINE/STOP BAR, CONSISTENT WITH THE LATEST EDITION OF THE CALIFORNIA MUTCD.
23. CONTRACTOR SHALL INSTALL BLUE RETROFLECTIVE RAISED PAVEMENT MARKERS TO DESIGNATE THE LOCATION OF ALL FIRE HYDRANTS, CONSISTENT WITH THE LATEST EDITION OF THE CALIFORNIA MUTCD.
24. STANDARD STRIPING AND PAVEMENT MARKER DETAILS AND DIMENSIONS/SPACING FOR PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITIONS OF THE CALTRANS STANDARD PLANS AND CALIFORNIA MUTCD.
25. APPLICATION OF TRAFFIC STRIPES, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL CONFORM TO THE LATEST EDITION OF THE CALTRANS STANDARD SPECIFICATIONS.
26. ALL SIGNS PURCHASED AND INSTALLED BY THE CONTRACTOR SHALL CONFORM TO THE STANDARDS PROVIDED IN THE LATEST EDITION OF THE CALIFORNIA MUTCD, INCLUDING SIGN SIZE, SHAPE, COLOR, SYMBOLS, RETROREFLECTIVITY, VERTICAL AND LATERAL MOUNTING OFFSETS, ECT. ALL SIGN FACE REFLECTIVE SHEETS SHALL BE HIGH INTENSITY GRADE WITH A CLEAR PROTECTIVE OVERLAY FILM (I.E. ANTI–GRAFFITI COATING).
27. ALL PEDESTRIAN CROSSING SIGNS, PEDESTRIAN ADVANCED WARNING SIGNS, AND SUPPLEMENTAL PLAQUES SHALL BE FLUORESCENT GREEN IN COLOR.
28. CONTRACTOR IS RESPONSIBLE FOR REPAINTING ALL CURB MARKINGS WITHIN THE PROJECT LIMITS.

LEGEND

ITEM:	STANDARD DRWG NO.	EXISTING:	NEW / RELOCATED:
1. LANE WIDTH		(XX')	XX'
2. STREET NAME SIGN	DS–13A TO DS–13E	SNS	SNS
3. SIGN LOCATION (SINGLE POST)			
4. SIGN LOCATION (DOUBLE POST)			
5. SIGN LOCATION (MOUNTED ON LUMINAIRE OR SIGNAL POLE)			
6. BIKE LANE ARROW	CALTRANS A24A		
7. BIKE LANE SYMBOL WITH PERSON	CALTRANS A24C		
8. "AHEAD" PAVEMENT MARKING	CALTRANS A24D	AHEAD	AHEAD
9. "BIKE" PAVEMENT MARKING	CALTRANS A24D	BIKE	BIKE
10. "LANE" PAVEMENT MARKING	CALTRANS A24D	LANE	LANE
11. "STOP" PAVEMENT MARKING	CALTRANS A24D	STOP	STOP
12. TYPE I 10' THROUGH ARROW	CALTRANS A24A		
13. TYPE I 24' THROUGH ARROW	CALTRANS A24A		
14. TYPE II THROUGH–LEFT ARROW	CALTRANS A24B		
15. TYPE II THROUGH–RIGHT ARROW	CALTRANS A24B		
16. TYPE III LEFT–TURN ARROW	CALTRANS A24B		
17. TYPE III RIGHT–TURN ARROW	CALTRANS A24B		
18. TYPE VI ARROW	CALTRANS A24A		
19. TYPE VII THROUGH–LEFT ARROW	CALTRANS A24A		
20. TYPE IV LEFT–TURN ARROW	CALTRANS A24A		
21. TYPE IV RIGHT–TURN ARROW	CALTRANS A24A		
22. TYPE VII THROUGH–RIGHT ARROW	CALTRANS A24A		
23. LANE LINE PATTERN (DETAIL 12)	CALTRANS A20A		
24. TWO–DIRECTION NO–PASSING PATTERN (DETAIL 22)	CALTRANS A20A		
25. LEFT EDGELINE (DETAIL 25)	CALTRANS A20B		
26. RIGHT EDGELINE (DETAIL 27B)	CALTRANS A20B		
27. TWO–WAY LEFT TURN LANE (DETAIL 32)	CALTRANS A20B		
28. WHITE CHANNELIZING LINE (DETAIL 38)	CALTRANS A20D		
29. BIKE LANE LINE (DETAIL 39)	CALTRANS A20D		
30. BIKE INTERSECTION LINE (DETAIL 39A)	CALTRANS A20D		
31. LANE LINE EXTENSION THROUGH INTERSECTIONS (DETAIL 40)	CALTRANS A20D		

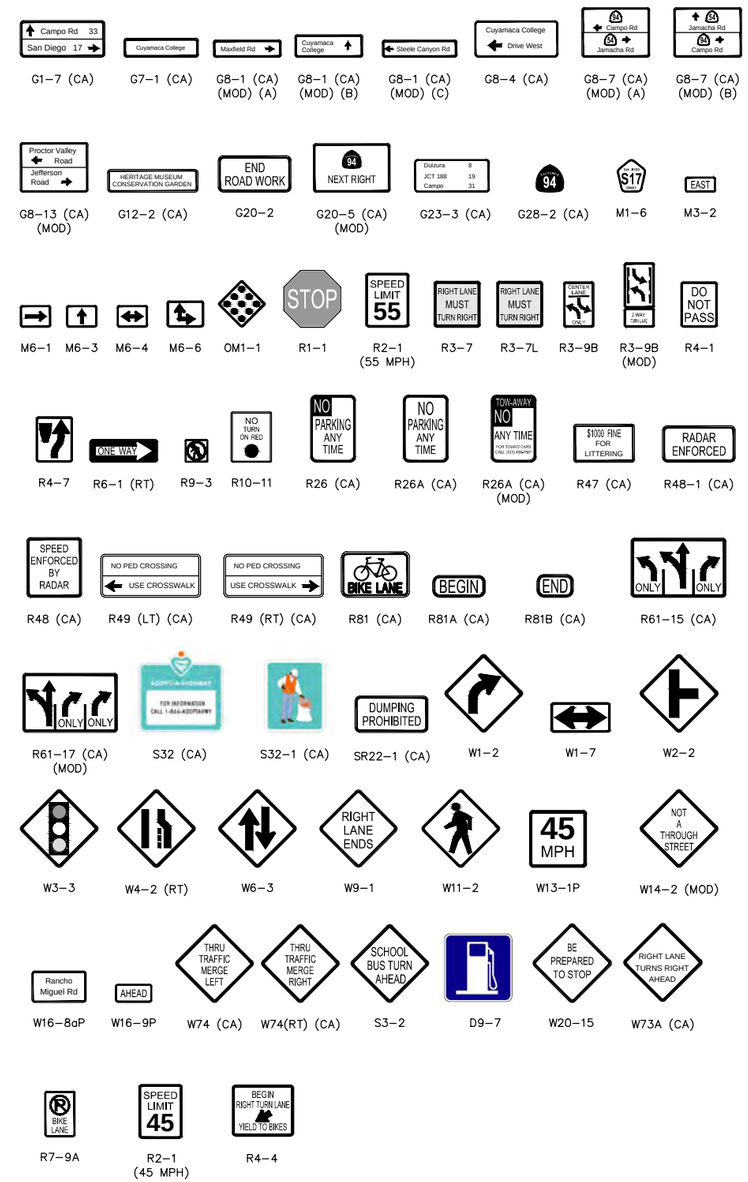
PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

REGISTERED PROFESSIONAL ENGINEER — LORENZO ESPELET — C053532 — STATE OF CALIFORNIA — NOT FOR CONSTRUCTION

KIMLEY–HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619–234–9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

SIGN LEGEND:



65% SUBMITTAL - NOT FOR CONSTRUCTION

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619–234–9411
WWW.KIMLEY–HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1850018 N. 6345504 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT JAMACHA BLVD & JAMACHA RD

SIGNING AND PAVEMENT MARKING NOTES

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 13 OF 32 SHEETS

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

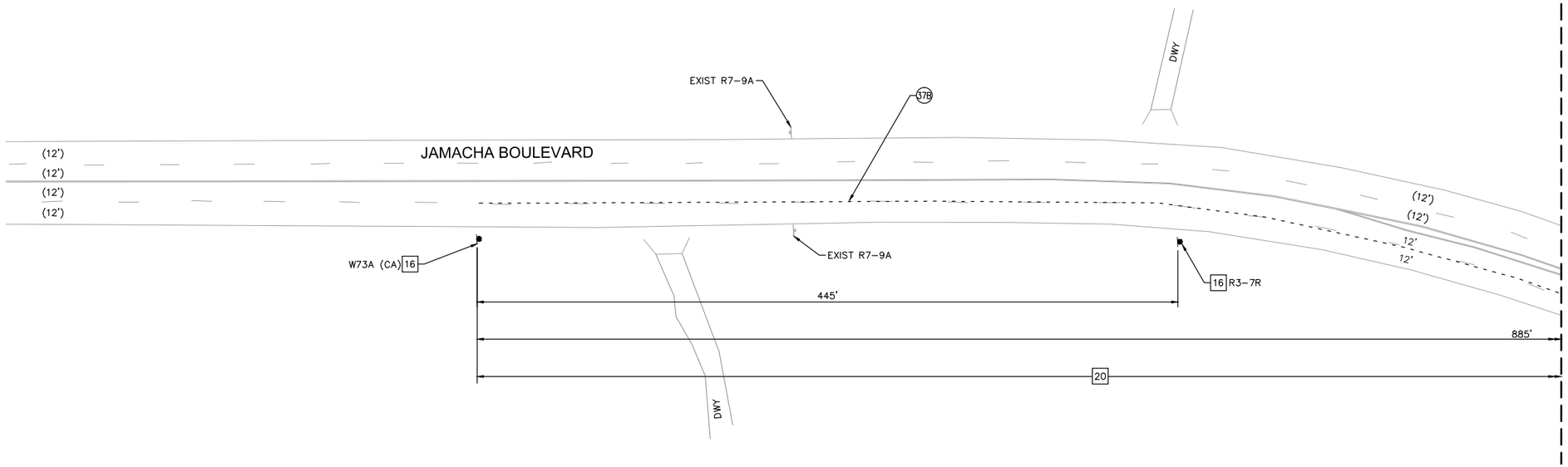
PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

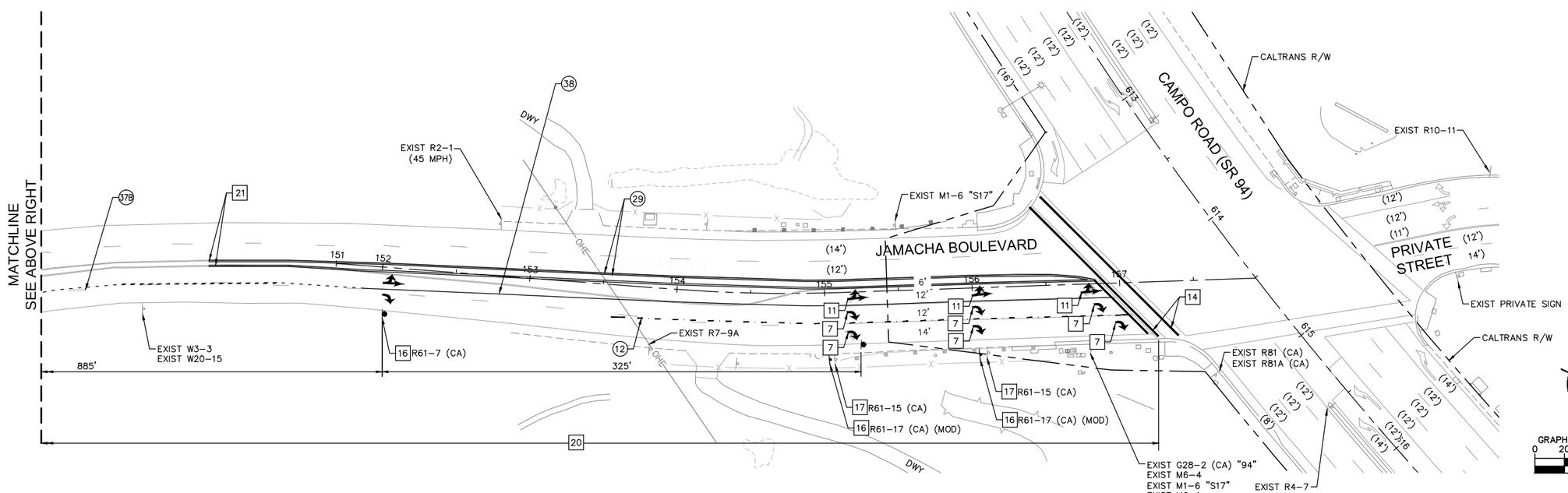
STRIPING LEGEND

- (12) 4" WHITE LANE LINE, STD. PLAN A20A, DETAIL 12
- (29) 4" YELLOW MEDIAN ISLAND LINE, STD. PLAN A20B, DETAIL 29
- (37B) 8" WHITE LANE DROP AT INTERSECTIONS, STD. PLAN A20C, DETAIL 37B
- (38) 8" WHITE, STD. PLAN A20D, DETAIL 38



SIGNING AND MARKING NOTES

- 7 TYPE IV(R) ARROW, STD. PLAN A24A
- 11 TYPE VII(L) ARROW, STD. PLAN A24A
- 14 12" WHITE LIMIT LINE, STD. PLAN A24E
- 16 FURNISH AND INSTALL NEW SIGN.
- 17 REMOVE AND SALVAGE EXISTING SIGN.
- 20 REMOVE CONFLICTING STRIPING
- 21 MATCH EXISTING STRIPING



COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1850018 N. 6345504 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS
AT JAMACHA BLVD & JAMACHA RD

SIGNING AND PAVEMENT MARKING PLAN

SCALE: HOR. 1" = 40' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 14 OF 32 SHEETS

65% SUBMITTAL - NOT FOR CONSTRUCTION

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FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

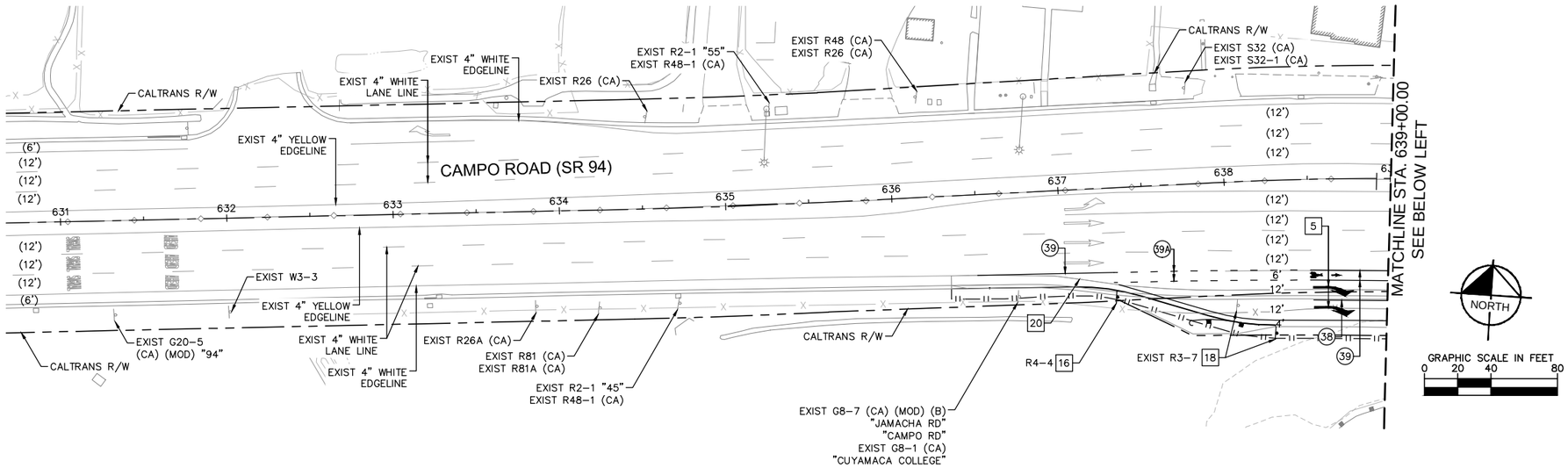
KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

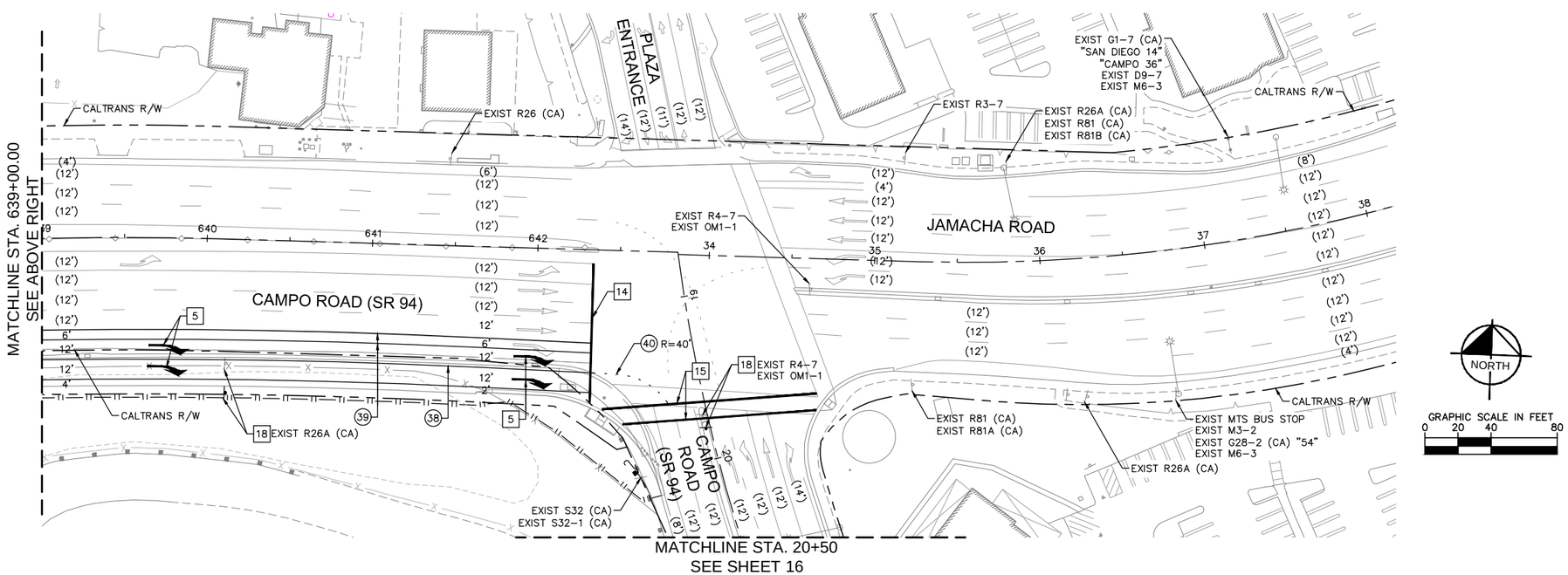
REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

PRELIMINARY NOT FOR CONSTRUCTION

STRIPING LEGEND

- (38) 8" WHITE, STD. PLAN A20D, DETAIL 38
- (39) 6" WHITE LINE, STD. PLAN A20D, DETAIL 39
- (39A) 6" WHITE LINE, STD. PLAN A20D, DETAIL 39A
- (40) 4" WHITE INTERSECTION LANE LINE, STD. PLAN A20D, DETAIL 40





SIGNING AND MARKING NOTES

- 5 TYPE III(R) ARROW, STD. PLAN A24B
- 14 12" WHITE LIMIT LINE, STD. PLAN A24E
- 15 12" WHITE CROSSWALK, STD. PLAN A24E
- 16 FURNISH AND INSTALL NEW SIGN.
- 18 RELOCATE EXISTING SIGN(S) TO NEW LOCATION.
- 20 REMOVE CONFLICTING STRIPING

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX: 1850018 N. 6345504 E.
CONST. COMPL. _____
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CAMPO RD (SR94) IMPROVEMENTS AT JAMACHA BLVD & JAMACHA RD

SIGNING AND PAVEMENT MARKING PLAN

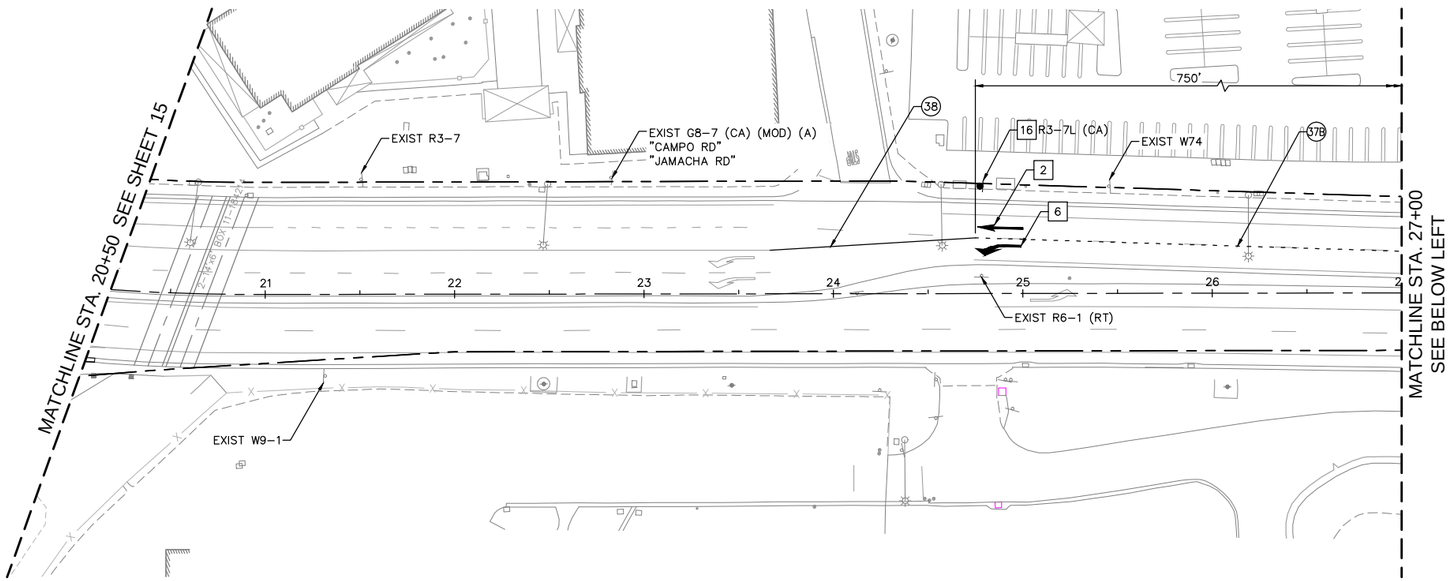
SCALE: HOR. 1" = 40' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 15 OF 32 SHEETS

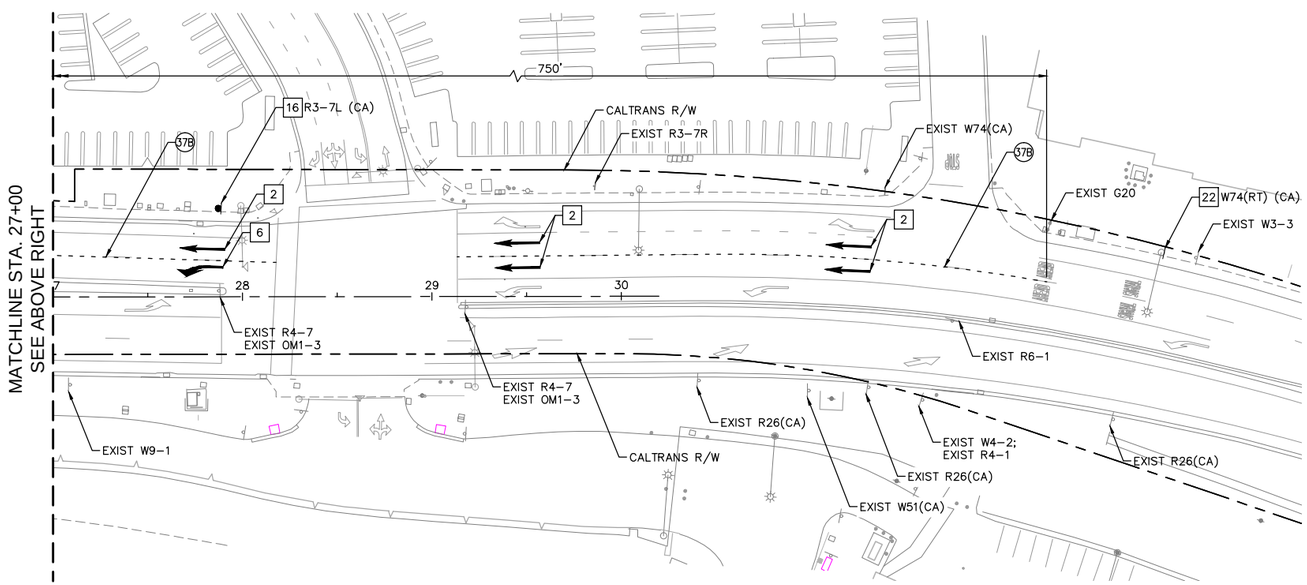
FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE





STRIPING LEGEND

37B 8" WHITE LANE DROP AT INTERSECTIONS, STD. PLAN A20C, DETAIL 37B

38 8" WHITE, STD. PLAN A20D, DETAIL 38

SIGNING AND MARKING NOTES

2 TYPE I 24' ARROW, STD. PLAN A24A

6 TYPE III(L) ARROW, STD. PLAN A24B

16 FURNISH AND INSTALL NEW SIGN

22 FURNISH AND INSTALL NEW SIGN ON EXISTING POLE

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

65% SUBMITTAL - NOT FOR CONSTRUCTION

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
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CAMPO RD (SR94) IMPROVEMENTS
AT JAMACHA BLVD & JAMACHA RD

SIGNING AND PAVEMENT MARKING PLAN

SCALE: HOR. 1" = 40' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 16 OF 32 SHEETS

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PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

REGISTERED PROFESSIONAL ENGINEER — LONGRIDGE, LEONARD ELIMINAR — NOT FOR CONSTRUCTION — STATE OF CALIFORNIA

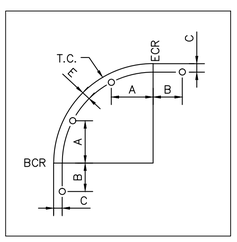
KIMLEY–HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619–234–9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

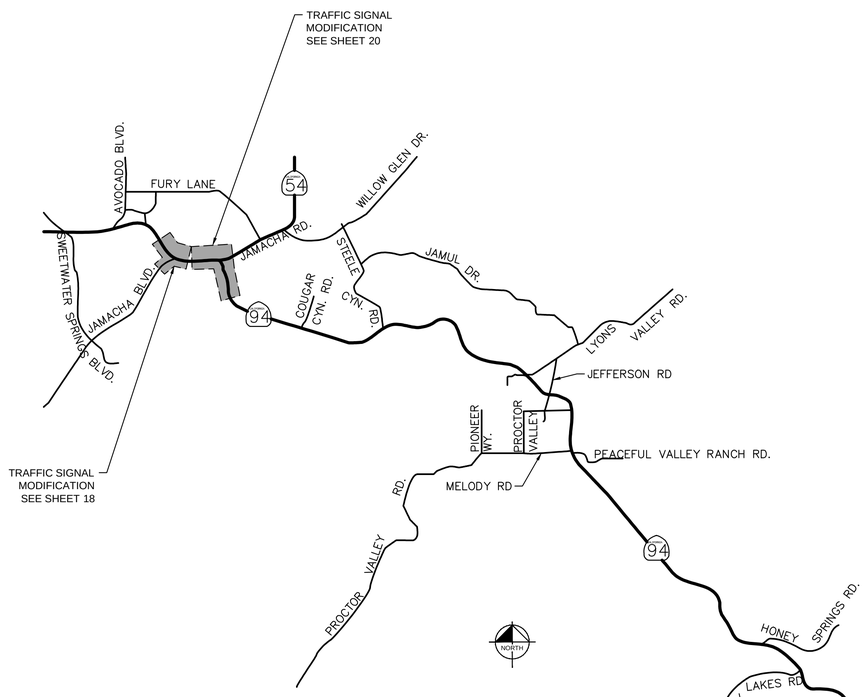
65% SUBMITTAL - NOT FOR CONSTRUCTION

GENERAL NOTES

1. THE LOCATION OF ALL UNDERGROUND UTILITIES IS APPROXIMATE, THE CONTRACTOR SHALL DETERMINE THE DEPTH OF ALL UTILITIES, INCLUDING THOSE NOT SHOWN ON THE PLANS, AND VERIFY ALL CONDITIONS ON THE JOB.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY ALL UTILITIES AND AGENCIES AT LEAST 48 HOURS IN ADVANCE.
3. ALL LOOPS SHALL BE CENTERED IN TRAVEL LANES UNLESS OTHERWISE NOTED.
4. ALL PULL BOXES ARE NUMBER 5, AND CONDUIT IS 2–INCH UNLESS OTHERWISE NOTED.
5. ALL SIGNAL HEADS SHALL BE TWELVE–INCH IN DIAMETER WITH BACK PLATES. ALL RED, YELLOW, AND GREEN INDICATIONS SHALL BE L.E.D.
6. PEDESTRIAN HEADS AND PUSHBUTTON SIGNS SHALL BE INTERNATIONAL SYMBOLS. PEDESTRIAN SIGNALS SHALL BE L.E.D., SIDE BY SIDE.
7. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR TRAFFIC SIGNAL INSTALLATION PER CALTRANS TRAFFIC MANUAL TO THE COUNTY OF SAN DIEGO TRAFFIC ENGINEERING SECTION A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION. FOR INFORMATION CALL (858) 874–4025.
8. ALL TRAFFIC SIGNAL POLE FOUNDATIONS SHALL HAVE A 3–INCH CONDUIT INSTALLED TO THE ADJACENT PULL BOX.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF LOOP DETECTORS, TRAFFIC STRIPING, PAVEMENT MARKING, PARKING REMOVAL, AND TRAFFIC SIGNING, AS SHOWN ON THE PLAN:
   a) THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE COUNTY TRAFFIC ENGINEERING SECTION FOR THE LOOP LOCATIONS, STRIPING, PAVEMENT, MARKINGS, PARKING REMOVAL, AND SIGN LOCATIONS PRIOR TO PAINTING AND INSTALLATION. CONTRACTOR SHALL USE LEAD–FREE PAINT FOR ALL STRIPING AND PAVEMENT MARKINGS.
   b) THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL CONFLICTING STRIPING AND PAVEMENT MARKINGS AND SANDBLASTING/GRINDING AND SAND SEALING.
10. CONTRACTOR SHALL NOT ERECT ANY SIGNAL STANDARDS MORE THAN THREE WEEKS PRIOR TO SCHEDULED TRAFFIC SIGNAL TURN ON.
11. FLASHING SIGNAL OPERATION SHALL BE RED ON ALL PHASES. PEDESTRIAN SIGNALS SHALL BE BLACK DURING FLASHING OPERATION.
12. ALL TRAFFIC SIGNAL IMPROVEMENTS SHALL BE INSTALLED IN COORDINATION WITH THE SIGNING AND STRIPING CONTRACTOR.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED BY APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT.
14. RAISED PAVEMENT MARKERS SHALL BE PLACED ON ALL NEW CENTERLINES AND LANE LINE STRIPING PER CALTRANS STANDARD PLANS.
15. CONTRACTOR SHALL REPLACE ALL STRIPING, PAVEMENT MARKERS, AND LEGENDS OBLITERATED BY THIS PROJECT.
16. CONTRACTOR SHALL REMOVE/TRIM VEGETATION PER ENGINEER.
17. ALL CONDUIT PLACED IN STREET SHALL HAVE A MINIMUM OF 24" COVER (R.S.D.) G–34.



POLE PLACEMENT DETAIL
N.T.S



VICINITY MAP
NOT TO SCALE

LEGEND

ITEM:	STANDARD DWG. NO.:	EXISTING:	NEW / RELOCATED:
1. SAFETY LIGHTING/LUMINAIRE, LPS 180 WATT EQUIVALENT	PER PLAN		
2. TRAFFIC SIGNAL STANDARD, MAST ARM, SNS, SIGN, VIDEO DETECTOR, VEHICLE INDICATIONS, EVP, PEDESTRIAN INDICATION, AND LUMINAIRE	PER PLAN		
3. EMERGENCY VEHICLE PREEMPTION (EVPE)	PER PLAN		
4. STREET NAME SIGNS (SNS)	SAN DIEGO COUNTY STD. DWG. NO. DS–13D & DS–13E		
5. PEDESTRIAN INDICATION	PER PLAN		
6. 170E CONTROLLER CABINET	CALTRANS & SAN DIEGO COUNTY SPECS.		
7. SERVICE POINT	PER PLAN		
9. ADVANCED VEHICLE DETECTION ZONE (LOOPS)	PER PLAN		
10. VIDEO DETECTION ZONE	PER PLAN		
11. CONDUIT	PER PLAN		
17. SIGN ON TRAFFIC SIGNAL EQUIPMENT	PER PLAN		
18. PULL BOX	PER PLAN		
19. VIDEO DETECTOR CAMERA	PER PLAN		
20. THROUGH VEHICLE INDICATION			
21. PROTECTED VEHICLE INDICATION			

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619–234–9411
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REVISIONS	BY	APPROVED	DATE

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1850018 N. 6345504 E.
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CAMPO RD (SR94) IMPROVEMENTS AT JAMACHA BLVD & JAMACHA RD

TRAFFIC SIGNAL NOTES

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 17 OF 32 SHEETS

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TRAFFIC SIGNAL NOTES

9 REMOVE AND SALVAGE EXISTING SIGN ON TRAFFIC SIGNAL MAST ARM. FURNISH AND INSTALL NEW SIGN ON TRAFFIC SIGNAL MAST ARM.

SIGNAL NO. P14.336

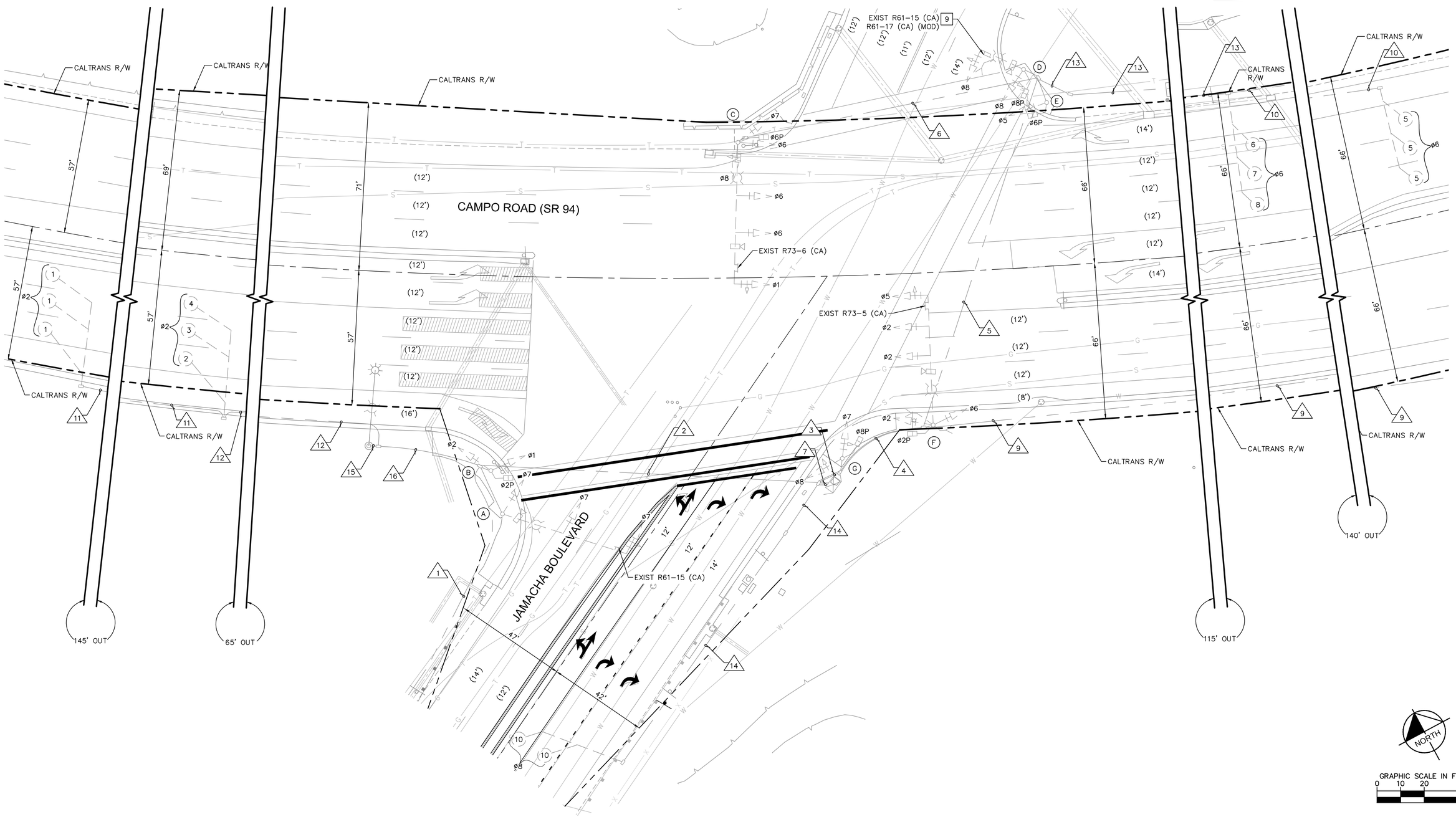
FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — DATE 12/31/2015

PRELIMINARY NOT FOR CONSTRUCTION



65% SUBMITTAL - NOT FOR CONSTRUCTION

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

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Mohamad Fakhrriddine, County Engineer

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401 B STREET, SUITE 600, SAN DIEGO, CA 92101
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REVISIONS	BY	APPROVED	DATE

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1850018 N. 6345504 E.
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CAMPO RD (SR94) IMPROVEMENTS AT JAMACHA BLVD

TRAFFIC SIGNAL MODIFICATION PLAN

SCALE: HOR. 1" = 20' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 18 OF 32 SHEETS

-1 0 1 2 3 4 5 6 7 8 9 10

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

REGISTERED PROFESSIONAL ENGINEER LORENZO ESPELET 53... STATE OF CALIFORNIA
PRELIMINARY NOT FOR CONSTRUCTION

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

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CONDUCTOR SCHEDULE

AWG SIZE	ø	CIRCUIT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CONDUCTORS 3 / 12 CONDUCTORS		POLE – A	– / –	– / 1	– / –	– / –	– / –	– / –	– / 1	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
		POLE – B	– / –	1 / 1	– / –	– / –	– / –	– / –	1 / 1	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
		POLE – C	– / –	– / –	1 / 2	1 / 2	1 / 2	1 / 2	1 / 2	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
		POLE – D	– / –	– / –	1 / 1	1 / 1	1 / 1	– / –	1 / 1	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
		POLE – E	– / –	– / –	1 / 1	1 / 1	1 / 1	– / –	1 / 1	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
		POLE – F	– / –	– / –	1 / 2	1 / 2	– / –	– / –	1 / 2	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
		POLE – G	– / –	– / –	1 / 1	– / –	– / –	– / –	1 / 1	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
			– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
			– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
			– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
TOTAL CABLES–3 CONDUCT./12 CONDUCT.			– / –	1 / 2	5 / 7	4 / 6	3 / 1	1 / 2	6 / 9	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
#14	PEU		3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#10	LIGHTING		4	2	2	2	2	2	–	–	–	–	–	–	–	–	2	2
#6	SIGNAL SERVICE		2	2	–	–	–	–	2	–	–	–	–	–	–	–	–	–
TYPE "B" DLC	ø2	DLC	–	2	–	–	–	–	4	–	–	–	1	4	–	–	–	4
	ø4	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø6	DLC	–	–	4	4	4	–	4	–	–	1	–	–	4	–	–	–
	ø8	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–
INTERCONNECT CABLE – SIC			–	1	1	1	–	–	2	–	1	–	1	1	–	–	–	1
VIDEO DETECTION CABLE			–	1	3	3	2	1	4	–	–	–	–	–	–	–	–	–
EMERGENCY VEHICLE PREEMPTION			–	–	4	4	2	–	4	–	–	–	–	–	–	–	–	–
CONDUIT SIZE			2"	3"	2–4"	2–3"	4"	2"	3–4"	N/A	2"	2"	2"	2"	2"	2"	2"	2"

ALL CONDUCTORS AND CONDUIT ARE EXISTING

TO BE COMPLETED FOR NEXT SUBMITTAL

SIGN LEGEND:

R61–15 (CA)
48" X 30"

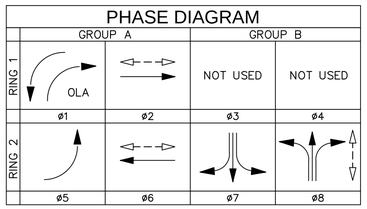
R61–17 (CA) (MOD)
48" X 30"

POLE SCHEDULE

POLE DATA No.	TYPE	Ht.	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE LPS	VEH SIG MTG MAST	VEH SIG MTG POLE	PED SIG MTG	PPB ø	PPB QUAD	POLE LOC. A	POLE LOC. B	POLE LOC. C	REMARKS
A	29–5–80	30'	55'	15'	180W	1–MAS–4B 1–MAT	SV–1–T	–	–	–	EX.	EX.	EX.	EX. R61–15 (CA), EX. R10–11a
B	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	2	S →	EX.	EX.	EX.	
C	61–5–80	30'	60'	15'	180W	3–MAS	SV–3–TC	SP–1–T	6	N →	EX.	EX.	EX.	EX. R73–6 (CA)
D	17–3–80	30'	20'	12'	180W	1–MAS–4B	SV–1–T	SP–1–T	6	S →	EX.	EX.	EX.	**R61–17 (CA) (MOD)**
E	1–A	10'	–	–	–	–	TV–1–T	SP–1–T	8	W →	EX.	EX.	EX.	
F	60–5–80	30'	55'	15'	180W	2–MAS 1–MAT	SV–1–T SV–1–T	SP–1–T	–	–	EX.	EX.	EX.	EX. R73–5 (CA)
G	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	–	S → / E →	EX.	EX.	EX.	EX. ø7 INDICATION TO REMAIN

BOLD = NEW

PHASE DIAGRAM



COUNTY OF SAN DIEGO
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5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

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Mohamad Fakhrriddine, County Engineer

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CAMPO RD (SR94) IMPROVEMENTS AT JAMACHA BLVD

TRAFFIC SIGNAL SCHEDULE AND DETAILS

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 19 OF 32 SHEETS

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TRAFFIC SIGNAL NOTES

1. INSTALL MODEL 332 ALUMINUM CABINET AND FOUNDATION. FURNISH AND INSTALL TYPE 170E CONTROLLER.
4. FURNISH AND INSTALL OPTICOM 722 EMERGENCY VEHICLE PREEMPTION (EVP) DETECTOR ON TOP OF SIGNAL MAST ARM AS SHOWN.
9. REMOVE AND SALVAGE EXISTING SIGN ON TRAFFIC SIGNAL MAST ARM. FURNISH AND INSTALL NEW SIGN ON TRAFFIC SIGNAL MAST ARM.
12. ALIGN EXISTING PEDESTRIAN SIGNAL HEAD FOR NEW INTERSECTION ALIGNMENT.
13. ALIGN EXISTING TRAFFIC SIGNAL HEAD FOR NEW INTERSECTION ALIGNMENT.
14. PROGRAM EXISTING VIDEO DETECTION CAMERA ON TRAFFIC SIGNAL MAST ARM FOR NEW LANE CONFIGURATION.
15. FURNISH AND INSTALL NEW VIDEO DETECTION CAMERA ON TRAFFIC SIGNAL MAST ARM AS SHOWN.
16. INSTALL RELOCATED SIGN ON TRAFFIC SIGNAL MAST ARM AS SHOWN.
17. INSTALL RELOCATED STREET NAME SIGN PER COUNTY OF SAN DIEGO STANDARD DRAWINGS DS-13D, DS-13E, AND DS-13F DATED 10/15/12.
20. REMOVE AND RELOCATE EXISTING 332 CONTROLLER CABINET, TRAFFIC SIGNAL CONTROLLER, AND ALL APPURTENANCES TO NEW LOCATION.
21. REMOVE AND SALVAGE EXISTING VIDEO CAMERA.

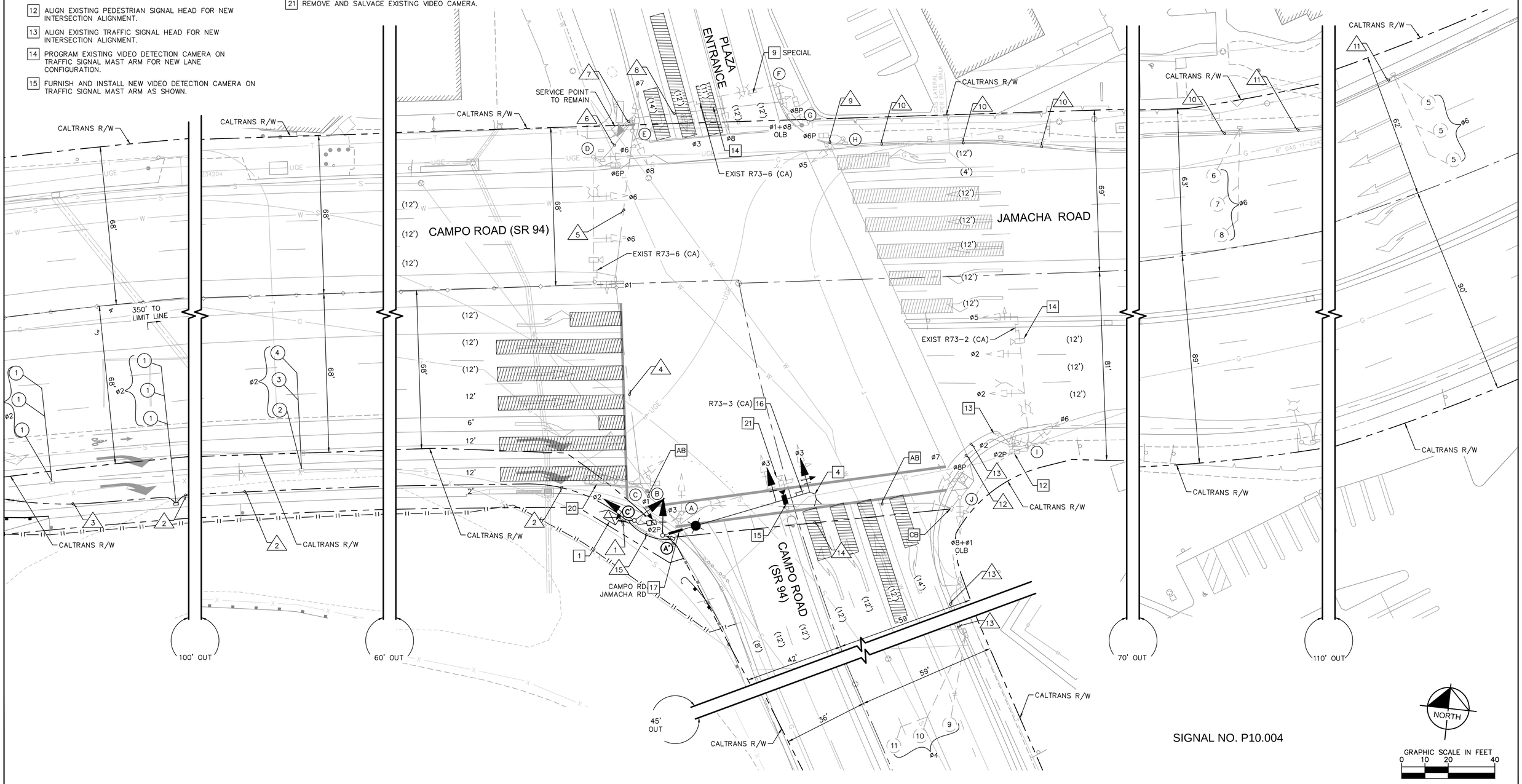
FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

PRELIMINARY NOT FOR CONSTRUCTION



SIGNAL NO. P10.004

65% SUBMITTAL - NOT FOR CONSTRUCTION

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1850018 N. 6345504 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT JAMACHA RD

TRAFFIC SIGNAL MODIFICATION PLAN

SCALE: HOR. 1" = 20' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 20 OF 32 SHEETS

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
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KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — DATE 12/31/2015

65% SUBMITTAL - NOT FOR CONSTRUCTION

CONDUCTOR SCHEDULE

AWG SIZE	ø	CIRCUIT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CONDUCTORS 3 / 12 CONDUCTORS		POLE – A	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL CABLES–3 CONDUCT./12 CONDUCT.			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#14	PEU		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#10	LIGHTING		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#6	SIGNAL SERVICE		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TYPE "B" DLC	ø2	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø4	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø6	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø8	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
INTERCONNECT CABLE – SIC			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VIDEO DETECTION CABLE			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EMERGENCY VEHICLE PREEMPTION			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CONDUIT SIZE			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

TO BE COMPLETED FOR NEXT SUBMITTAL

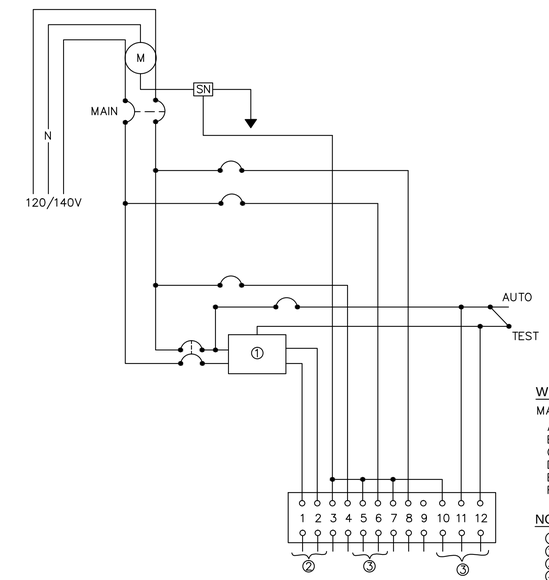
SIGN LEGEND:

R73-2 (CA)
36" X 36"

R73-3 (CA)
36" X 36"

R73-6 (CA)
36" X 36"

WIRING DIAGRAM:



WIRING DIAGRAM:
MAIN 2P – 100 AMP
A – SP-15 AMP SPARE
B – SP-50 AMP
C – SP-15 AMP SPARE
D – SP-15 AMP
E, F – SP-30AMP

NOTES:
1 – CONTACTOR
2 – LIGHTING
3 – SIGNAL
4 – PEU

POLE SCHEDULE

POLE DATA No.	TYPE	Ht.	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE LPS	VEH SIG MTG MAST	VEH SIG MTG POLE	PED SIG MTG	PPB ø	PPB QUAD	POLE LOC. A	POLE LOC. B	POLE LOC. C	REMARKS
A	29-5-80	30'	55'	15'	180W	1-MAS 1-MAT	SV-1-T	–	–	–	EX.	EX.	EX.	REMOVE AND SALVAGE EX. POLE, RELOCATE SIGNS AND EQUIPMENT TO LOCATION A'
A'	**61-5-100**	**30'**	**65'**	**15'**	**180W**	**1-MAS 1-MAT**	**SV-1-T**	**–**	**2**	**N**	**XX'**	**XX'**	**XX'**	**REUSE SIGNS AND EQUIPMENT FROM LOCATION A**
B	PPB	5'	–	–	–	–	–	–	2	N	EX.	EX.	EX.	REMOVE AND SALVAGE EX. POLE
C	1-A	10'	–	–	–	–	TV-2-T	SP-1-T	2	N	EX.	EX.	EX.	RELOCATE POLE AND EQUIPMENT TO LOCATION C'
C'	**1-A**	**10'**	**–**	**–**	**–**	**–**	**TV-2-T**	**SP-1-T**	**–**	**–**	**XX'**	**XX'**	**XX'**	**REUSE POLE AND EQUIPMENT FROM LOCATION C**
D	29-5-80	30'	55'	15'	180W	2-MAS 1-MAT	SV-1-T	SP-1-T	–	–	EX.	EX.	EX.	EX. R73-6 (CA)
E	1-A	10'	–	–	–	–	TV-2-T	–	6 / 6	S / S	EX.	EX.	EX.	2 EX. PPB
F	26-4-80	30'	40'	15'	180W	1-MAS 1-MAT	SV-1-T	SP-1-T	–	–	EX.	EX.	EX.	EX R73-6 (CA) **SPECIAL**
G	PPB	5'	–	–	–	–	–	–	6	S	EX.	EX.	EX.	
H	1-A	10'	–	–	–	–	TV-1-T	SP-1-T	8 / 8	W / W	EX.	EX.	EX.	1 EX. PPB 1 EX. HORSE PUSH BUTTON
I	29-5-80	30'	55'	15'	180W	2-MAS 1-MAT	SV-1-T SV-1-T	SP-1-T	–	–	EX.	EX.	EX.	EX. R73-2
J	1-A	10'	–	–	–	–	TV-2-T	SP-1-T	2 / 8	N / E	EX.	EX.	EX.	2 EX. PPB 2 EX. HORSE PUSH BUTTONS

BOLD=NEW

PHASE DIAGRAM

	GROUP A		GROUP B	
RING 1	OLB	OLA		OLA
	ø1	ø2	ø3	ø4
RING 2			NOT USED	NOT USED
	ø5	ø6	ø7	ø8

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
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Mohamad Fakhrriddine, County Engineer

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CAMPO RD (SR94) IMPROVEMENTS AT JAMACHA RD

TRAFFIC SIGNAL SCHEDULE AND DETAILS

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 21 OF 32 SHEETS

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GENERAL NOTES

1. ALL STRIPING AND SIGNING SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE FOLLOWING MANUALS:

DESCRIPTION	EDITION
STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (THE "GREENBOOK")	2012
CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD)	2012
SAN DIEGO COUNTY DESIGN STANDARDS	2012

2. ALL SIGNING AND STRIPING IS SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER PRIOR TO INSTALLATION AND/OR REMOVAL.
3. INSTALLATION OF ALL STRIPING, SIGNS, AND PAVEMENT MARKERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING, PAVEMENT MARKINGS, AND LEGENDS BY SANDBLASTING AND/OR GRINDING WITH THE SEAL. ANY DEBRIS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
5. CONTRACTOR SHALL REPLACE ANY STRIPING, PAVEMENT MARKERS, OR LEGENDS OBLITERATED BY CONSTRUCTION.
6. CONTRACTOR SHALL REMOVE ALL REDUNDANT STRIPING.
7. SIGN POSTS SHALL BE INSTALLED WITH ALUMINUM ALLOY 6063–T6, CLEAR ANODIZED POST PER SAN DIEGO COUNTY DESIGN STANDARD DRAWING NO. DS–13C.
8. ALL RAISED MEDIAN NOSES SHALL BE PAINTED YELLOW.
9. ALL EXISTING SIGNS SHOWN ON THE STRIPING AND SIGNING PLANS SHALL REMAIN UNLESS OTHERWISE NOTED. NEW SIGNS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR, EXCEPT FOR EXISTING SIGNS SPECIFICALLY INDICATED TO BE RELOCATED.
10. STRIPED CROSSWALKS SHALL HAVE AN INSIDE DIMENSION OF 10 FEET UNLESS INDICATED OTHERWISE.
11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS (EXCEPT WITHIN BIKE LANES) SHALL BE THERMOPLASTIC.
12. CONTRACTOR SHALL LAYOUT ALL INTERIM AND FINAL STRIPING, PAVEMENT MARKERS, AND SIGN PLACEMENT. LAYOUT SHALL BE INSPECTED BY THE ENGINEER PRIOR TO INSTALLATION.
13. THE CONTRACTOR SHALL NOTIFY THE COUNTY TRAFFIC ENGINEER A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO AND UPON COMPLETION OF STRIPING AND SIGNING TO SCHEDULE A FINAL INSPECTION.
14. ALL REFERENCES TO THE "COUNTY" SHALL EXPLICITLY REFER TO THE "COUNTY OF SAN DIEGO."
15. CONTRACTOR SHALL SUBMIT PRODUCT MANUALS AND SPECIFICATIONS FOR THERMOPLASTIC MATERIALS AT THE PRE–CONSTRUCTION MEETING FOR APPROVAL BY THE PROJECT ENGINEER.
16. CONTRACTOR SHALL REMOVE ALL CONFLICTING RAISED PAVEMENT MARKERS PRIOR TO STRIPING. PAVEMENT THAT IS DAMAGED DUE TO THE REMOVAL OF MARKERS SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE PROJECT ENGINEER.
17. SURFACES WHICH ARE TO RECEIVE NEW STRIPING, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL BE CLEANED OF ALL DIRTY AND LOOSE MATERIALS PRIOR TO INSTALLATION.
18. ALL TRAFFIC STRIPES 6 INCHES OR LESS IN WIDTH SHALL BE INSTALLED WITH TWO COATS OF PAINT. THE FIRST COAT OF PAINT SHALL BE DRY BEFORE APPLICATION OF THE SECOND COAT PER THE LATEST STANDARD SPECIFICATION.
19. FOR ALL ROADWAY CENTERLINES REQUIRING DOUBLE YELLOW TRAFFIC STRIPING, THE CONTRACTOR SHALL CONCURRENTLY PAINT A 3–INCH WIDE BLACK STRIPE BETWEEN THE TWO 4–INCH WIDE YELLOW STRIPES.
20. ALL LIMIT LINES/STOP BARS SHALL BE LOCATED AT THE PROLONGATION OF THE CENTER DELTA OF THE CURB RETURN OR BEHIND THE PEDESTRIAN ACCESS RAMP, UNLESS OTHERWISE SPECIFIED. IF A STRIPED CROSSWALK EXISTS, THE LIMIT LINE/STOP BAR SHALL BE LOCATED 4 FEET IN ADVANCE OF THE CROSSWALK.
21. ALL STRIPING SHALL BEGIN AND TERMINATE AT QUARTER DELTA OF THE CURB, OR BACK OF THE LIMIT LINE/STOP BAR, UNLESS OTHERWISE SPECIFIED.
22. "STOP" PAVEMENT MARKINGS SHALL BE INSTALLED 8 FEET IN ADVANCE OF THE LIMIT LINE/STOP BAR, CONSISTENT WITH THE LATEST EDITION OF THE CALIFORNIA MUTCD.
23. CONTRACTOR SHALL INSTALL BLUE RETROFLECTIVE RAISED PAVEMENT MARKERS TO DESIGNATE THE LOCATION OF ALL FIRE HYDRANTS, CONSISTENT WITH THE LATEST EDITION OF THE CALIFORNIA MUTCD.
24. STANDARD STRIPING AND PAVEMENT MARKER DETAILS AND DIMENSIONS/SPACING FOR PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITIONS OF THE CALTRANS STANDARD PLANS AND CALIFORNIA MUTCD.
25. APPLICATION OF TRAFFIC STRIPES, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL CONFORM TO THE LATEST EDITION OF THE CALTRANS STANDARD SPECIFICATIONS.
26. ALL SIGNS PURCHASED AND INSTALLED BY THE CONTRACTOR SHALL CONFORM TO THE STANDARDS PROVIDED IN THE LATEST EDITION OF THE CALIFORNIA MUTCD, INCLUDING SIGN SIZE, SHAPE, COLOR, SYMBOLS, RETROREFLECTIVITY, VERTICAL AND LATERAL MOUNTING OFFSETS, ECT. ALL SIGN FACE REFLECTIVE SHEETS SHALL BE HIGH INTENSITY GRADE WITH A CLEAR PROTECTIVE OVERLAY FILM (I.E. ANTI–GRAFFITI COATING).
27. ALL PEDESTRIAN CROSSING SIGNS, PEDESTRIAN ADVANCED WARNING SIGNS, AND SUPPLEMENTAL PLAQUES SHALL BE FLUORESCENT GREEN IN COLOR.
28. CONTRACTOR IS RESPONSIBLE FOR REPAINTING ALL CURB MARKINGS WITHIN THE PROJECT LIMITS.

LEGEND

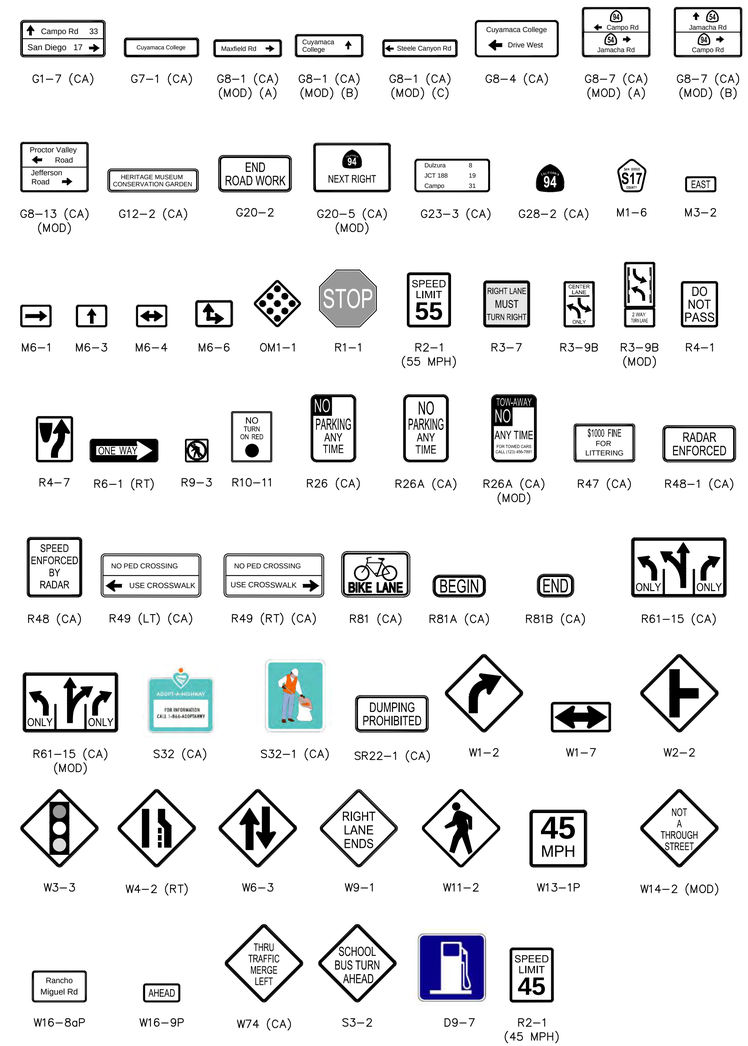
ITEM:	STANDARD DRWG NO.	EXISTING:	NEW / RELOCATED:
1. LANE WIDTH		(XX')	XX'
2. STREET NAME SIGN	DS–13A TO DS–13E	SNS	SNS
3. SIGN LOCATION (SINGLE POST)			
4. SIGN LOCATION (DOUBLE POST)			
5. SIGN LOCATION (MOUNTED ON LUMINAIRE OR SIGNAL POLE)			
6. BIKE LANE ARROW	CALTRANS A24A		
7. BIKE LANE SYMBOL WITH PERSON	CALTRANS A24C		
8. "AHEAD" PAVEMENT MARKING	CALTRANS A24D	AHEAD	AHEAD
9. "BIKE" PAVEMENT MARKING	CALTRANS A24D	BIKE	BIKE
10. "LANE" PAVEMENT MARKING	CALTRANS A24D	LANE	LANE
11. "STOP" PAVEMENT MARKING	CALTRANS A24D	STOP	STOP
12. TYPE I 10' THROUGH ARROW	CALTRANS A24A		
13. TYPE I 24' THROUGH ARROW	CALTRANS A24A		
14. TYPE II THROUGH–LEFT ARROW	CALTRANS A24B		
15. TYPE II THROUGH–RIGHT ARROW	CALTRANS A24B		
16. TYPE III LEFT–TURN ARROW	CALTRANS A24B		
17. TYPE III RIGHT–TURN ARROW	CALTRANS A24B		
18. TYPE VI ARROW	CALTRANS A24A		
19. TYPE VII THROUGH–LEFT ARROW	CALTRANS A24A		
20. TYPE IV LEFT–TURN ARROW	CALTRANS A24A		
21. TYPE IV RIGHT–TURN ARROW	CALTRANS A24A		
22. TYPE VII THROUGH–RIGHT ARROW	CALTRANS A24A		
23. LANE LINE PATTERN (DETAIL 12)	CALTRANS A20A		
24. TWO–DIRECTION NO–PASSING PATTERN (DETAIL 22)	CALTRANS A20A		
25. LEFT EDGELINE (DETAIL 25)	CALTRANS A20B		
26. RIGHT EDGELINE (DETAIL 27B)	CALTRANS A20B		
27. TWO–WAY LEFT TURN LANE (DETAIL 32)	CALTRANS A20B		
28. WHITE CHANNELIZING LINE (DETAIL 38)	CALTRANS A20D		
29. BIKE LANE LINE (DETAIL 39)	CALTRANS A20D		
30. BIKE INTERSECTION LINE (DETAIL 39A)	CALTRANS A20D		
31. LANE LINE EXTENSION THROUGH INTERSECTIONS (DETAIL 40)	CALTRANS A20D		

PLANS	BY	DATE
DESIGNED		04/2014
CHECKED		

KIMLEY–HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619–234–9411

REGISTERED CIVIL ENGINEER DATE

SIGN LEGEND:



65% SUBMITTAL - NOT FOR CONSTRUCTION

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619–234–9411
WWW.KIMLEY–HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1842715 N. 6367329 E.
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CAMPO RD (SR94) IMPROVEMENTS AT LYONS VALLEY RD & MAXFIELD RD

SIGNING AND PAVEMENT MARKING NOTES

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 20 OF 38 SHEETS

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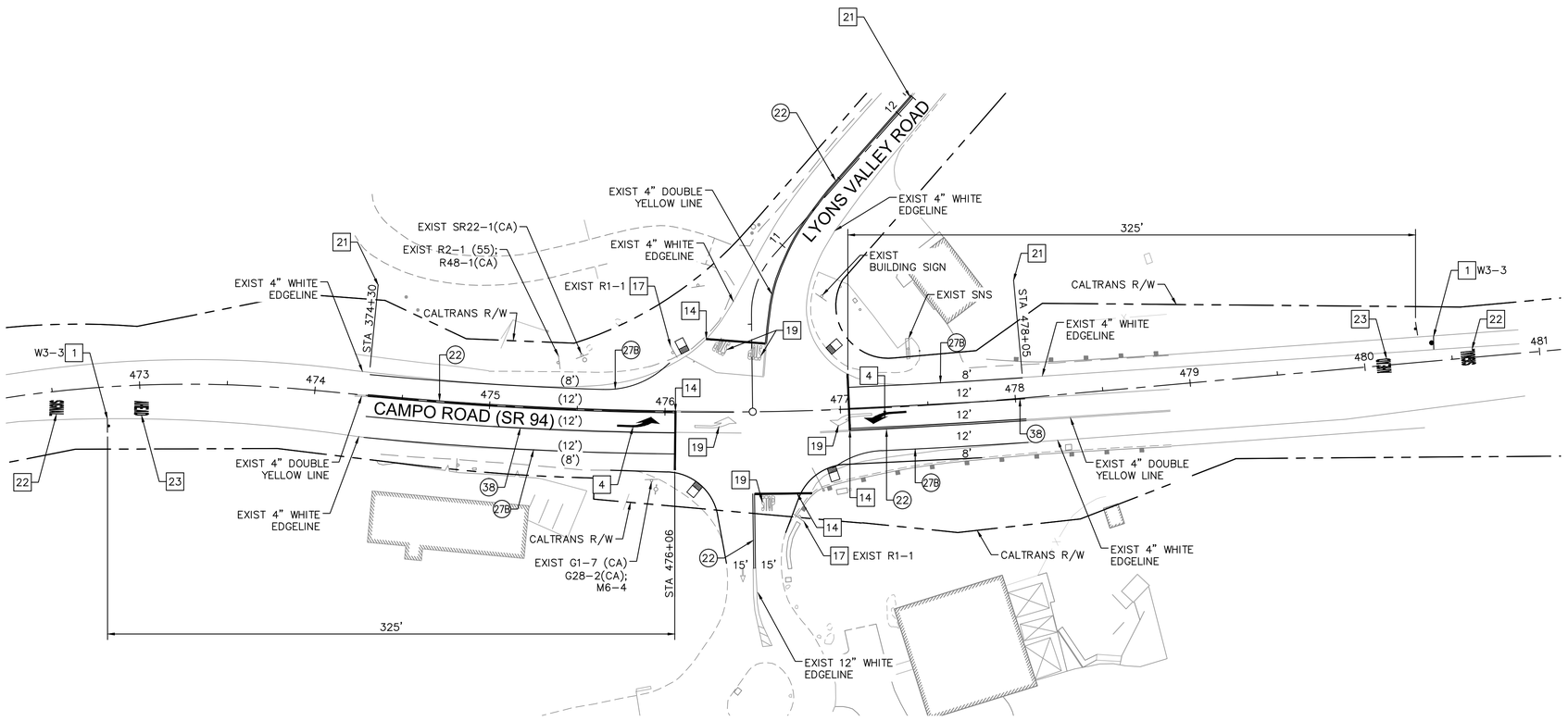
KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — DATE 12/31/2015

PRELIMINARY NOT FOR CONSTRUCTION

STRIPING LEGEND

- (22) 4" DOUBLE YELLOW LINE, STD. PLAN A20A, DETAIL 22
- (27B) 4" WHITE EDGELINE, STD. PLAN A20B, DETAIL 27B
- (38) 8" WHITE, STD. PLAN A20D, DETAIL 38



SIGNING AND MARKING NOTES

1. TYPE I 10' ARROW, STD. PLAN A24A
4. TYPE II(L) ARROW, STD. PLAN A24B
14. 12" WHITE LIMIT LINE, STD. PLAN A24E
17. REMOVE AND SALVAGE EXISTING SIGN
19. REMOVE EXISTING PAVEMENT MARKING
21. MATCH EXISTING STRIPING
22. "SIGNAL" LEGEND, STD. PLAN A24D
23. "AHEAD" LEGEND, STD. PLAN A24D

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
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Mohamad Fakhrriddine, County Engineer

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CAMPO RD (SR94) IMPROVEMENTS AT LYONS VALLEY RD & MAXFIELD RD

SIGNING AND PAVEMENT MARKING PLAN

SCALE: HOR. 1" = 40' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 24 OF 38 SHEETS

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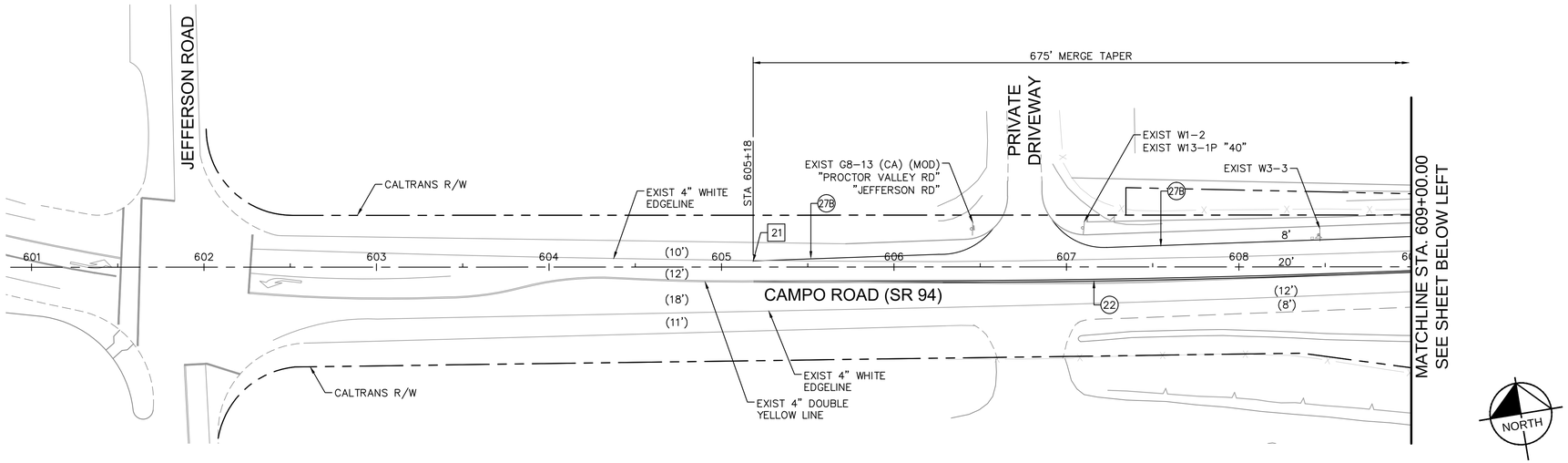
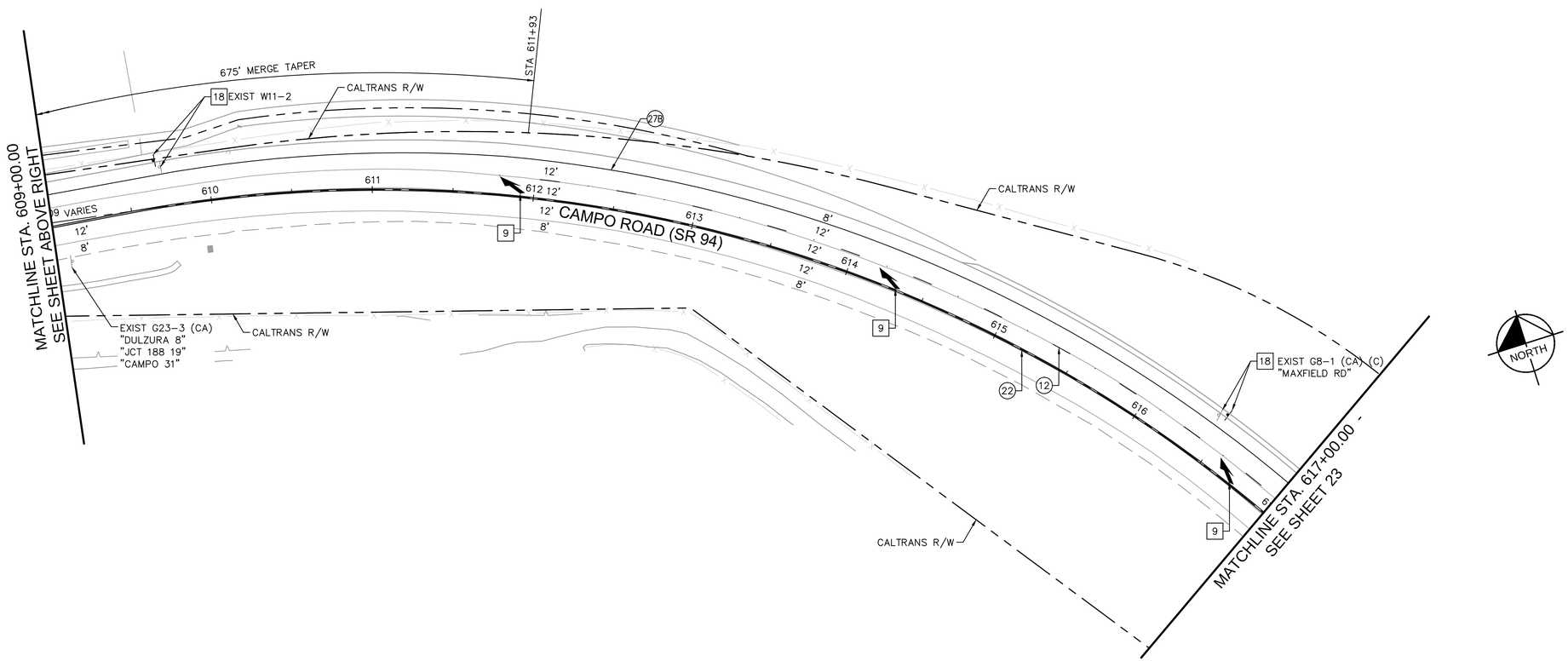


STRIPING LEGEND

- (12) 4" WHITE LANE LINE, STD. PLAN A20A, DETAIL 12
- (22) 4" DOUBLE YELLOW LINE, STD. PLAN A20A, DETAIL 22
- (27B) 4" WHITE EDGELINE, STD. PLAN A20B, DETAIL 27B



SIGNING AND MARKING NOTES

- 9 TYPE VI ARROW, STD.PLAN A24A
- 18 RELOCATE EXISTING SIGN(S) TO NEW LOCATION
- 21 MATCH EXISTING STRIPING

GRAPHIC SCALE IN FEET
0 20 40 80

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SHEET 22 OF 38 SHEETS

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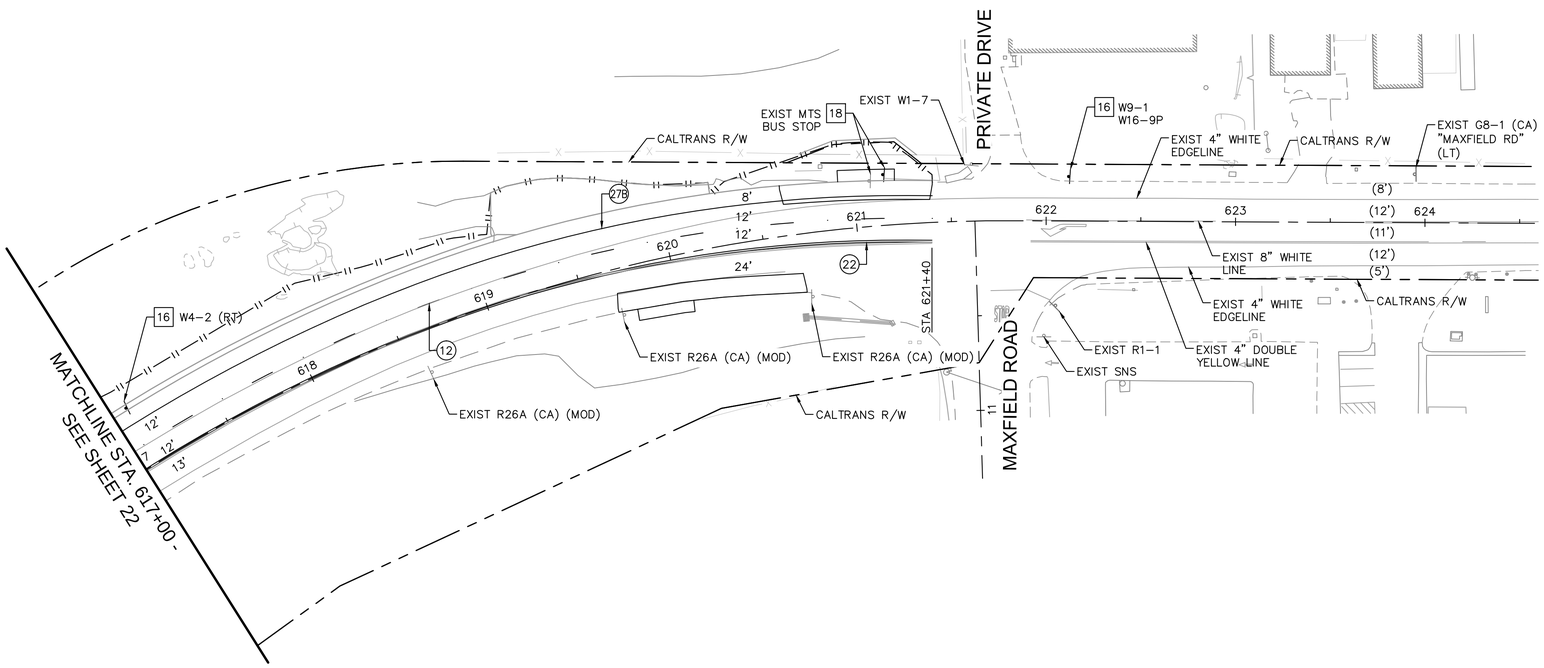
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — DATE 12/31/2015

STRIPING LEGEND

- (12) 4" WHITE LANE LINE, STD. PLAN A20A, DETAIL 12
- (22) 4" DOUBLE YELLOW LINE, STD. PLAN A20A, DETAIL 22
- (27B) 4" WHITE EDGELINE, STD. PLAN A20B, DETAIL 27B



SIGNING AND MARKING NOTES

- 16 FURNISH AND INSTALL NEW SIGN
- 18 RELOCATE EXISTING SIGN(S) TO NEW LOCATION

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

65% SUBMITTAL - NOT FOR CONSTRUCTION

K:\SND_TPTO\095848001 - JIV Design\Design\PS&E Off-site\Plan Sheets\Lyons Valley Rd & Maxfield\848001-SM-08.dwg Tuesday, May, 27 2014 12:29pm othman.elmezain

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1842715 N. 6367329 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS
AT LYONS VALLEY RD & MAXFIELD RD

SIGNING AND PAVEMENT MARKING PLAN

SCALE: HOR. 1" = 40' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 23 OF 38 SHEETS

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

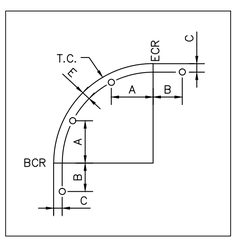
REGISTERED PROFESSIONAL ENGINEER — LEONARDO ESPELET — 61553 — STATE OF CALIFORNIA — PRELIMINARY — NOT FOR CONSTRUCTION

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

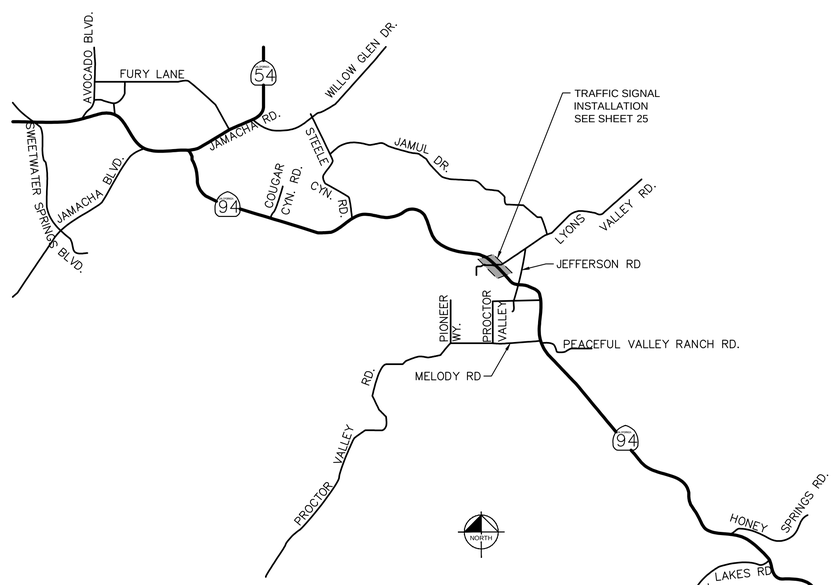
REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

GENERAL NOTES

1. THE LOCATION OF ALL UNDERGROUND UTILITIES IS APPROXIMATE, THE CONTRACTOR SHALL DETERMINE THE DEPTH OF ALL UTILITIES, INCLUDING THOSE NOT SHOWN ON THE PLANS, AND VERIFY ALL CONDITIONS ON THE JOB.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY ALL UTILITIES AND AGENCIES AT LEAST 48 HOURS IN ADVANCE.
3. ALL LOOPS SHALL BE CENTERED IN TRAVEL LANES UNLESS OTHERWISE NOTED.
4. ALL PULL BOXES ARE NUMBER 5, AND CONDUIT IS 2-INCH UNLESS OTHERWISE NOTED.
5. ALL SIGNAL HEADS SHALL BE TWELVE-INCH IN DIAMETER WITH BACK PLATES. ALL RED, YELLOW, AND GREEN INDICATIONS SHALL BE L.E.D.
6. PEDESTRIAN HEADS AND PUSHBUTTON SIGNS SHALL BE INTERNATIONAL SYMBOLS. PEDESTRIAN SIGNALS SHALL BE L.E.D., SIDE BY SIDE.
7. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR TRAFFIC SIGNAL INSTALLATION PER CALTRANS TRAFFIC MANUAL TO THE COUNTY OF SAN DIEGO TRAFFIC ENGINEERING SECTION A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION. FOR INFORMATION CALL (858) 874-4025.
8. ALL TRAFFIC SIGNAL POLE FOUNDATIONS SHALL HAVE A 3-INCH CONDUIT INSTALLED TO THE ADJACENT PULL BOX.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF LOOP DETECTORS, TRAFFIC STRIPING, PAVEMENT MARKING, PARKING REMOVAL, AND TRAFFIC SIGNING, AS SHOWN ON THE PLAN:
   a) THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE COUNTY TRAFFIC ENGINEERING SECTION FOR THE LOOP LOCATIONS, STRIPING, PAVEMENT, MARKINGS, PARKING REMOVAL, AND SIGN LOCATIONS PRIOR TO PAINTING AND INSTALLATION. CONTRACTOR SHALL USE LEAD-FREE PAINT FOR ALL STRIPING AND PAVEMENT MARKINGS.
   b) THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL CONFLICTING STRIPING AND PAVEMENT MARKINGS AND SANDBLASTING/GRINDING AND SAND SEALING.
10. CONTRACTOR SHALL NOT ERECT ANY SIGNAL STANDARDS MORE THAN THREE WEEKS PRIOR TO SCHEDULED TRAFFIC SIGNAL TURN ON.
11. FLASHING SIGNAL OPERATION SHALL BE RED ON ALL PHASES. PEDESTRIAN SIGNALS SHALL BE BLACK DURING FLASHING OPERATION.
12. ALL TRAFFIC SIGNAL IMPROVEMENTS SHALL BE INSTALLED IN COORDINATION WITH THE SIGNING AND STRIPING CONTRACTOR.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED BY APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT.
14. RAISED PAVEMENT MARKERS SHALL BE PLACED ON ALL NEW CENTERLINES AND LANE LINE STRIPING PER CALTRANS STANDARD PLANS.
15. CONTRACTOR SHALL REPLACE ALL STRIPING, PAVEMENT MARKERS, AND LEGENDS OBLITERATED BY THIS PROJECT.
16. CONTRACTOR SHALL REMOVE/TRIM VEGETATION PER ENGINEER.
17. ALL CONDUIT PLACED IN STREET SHALL HAVE A MINIMUM OF 24" COVER (R.S.D.) G-34.



POLE PLACEMENT DETAIL
N.T.S



VICINITY MAP
NOT TO SCALE

LEGEND

ITEM:	STANDARD DWG. NO.:	EXISTING:	NEW / RELOCATED:
1. SAFETY LIGHTING/LUMINAIRE, LPS 180 WATT EQUIVALENT	PER PLAN		
2. TRAFFIC SIGNAL STANDARD, MAST ARM, SNS, SIGN, VIDEO DETECTOR, VEHICLE INDICATIONS, EVP, PEDESTRIAN INDICATION, AND LUMINAIRE	PER PLAN		
3. EMERGENCY VEHICLE PREEMPTION (EVPE)	PER PLAN		
4. STREET NAME SIGNS (SNS)	SAN DIEGO COUNTY STD. DWG. NO. DS-13D & DS-13E		
5. PEDESTRIAN INDICATION	PER PLAN		
6. 170E CONTROLLER CABINET	CALTRANS & SAN DIEGO COUNTY SPECS.		
7. SERVICE POINT	PER PLAN		
9. ADVANCED VEHICLE DETECTION ZONE (LOOPS)	PER PLAN		
10. VIDEO DETECTION ZONE	PER PLAN		
11. CONDUIT	PER PLAN		
17. SIGN ON TRAFFIC SIGNAL EQUIPMENT	PER PLAN		
18. PULL BOX	PER PLAN		
19. VIDEO DETECTOR CAMERA	PER PLAN		
20. THROUGH VEHICLE INDICATION			
21. PROTECTED VEHICLE INDICATION			

65% SUBMITTAL - NOT FOR CONSTRUCTION

K:\SND_TPTO\095848001 - JIV Design\Design\PS&E Off-site\Plan Sheets\Lyons Valley Rd & Maxfield\848001-TS-00.dwg Tuesday, May, 27 2014 12:29pm othman.elmezain

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1842715 N. 6367329 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT LYONS VALLEY RD

TRAFFIC SIGNAL NOTES

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 24 OF 38 SHEETS

TRAFFIC SIGNAL NOTES

1. FURNISH AND INSTALL MODEL 332 ALUMINUM CABINET AND FOUNDATION. FURNISH AND INSTALL TYPE 170E ATC CONTROLLER.
2. FURNISH AND INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM AS SHOWN.
3. FURNISH AND INSTALL VIDEO DETECTION CAMERA ON TRAFFIC SIGNAL MAST ARM AS SHOWN.
4. FURNISH AND INSTALL OPTICOM 722 EMERGENCY VEHICLE PREEMPTION (EVP) DETECTOR ON TOP OF SIGNAL MAST ARM AS SHOWN.
5. FURNISH AND INSTALL 120V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE.
6. FURNISH AND INSTALL SIGN ON MAST ARM.
8. FURNISH AND INSTALL TRAFFIC SIGNAL STREET NAME SIGN PER COUNTY OF SAN DIEGO STANDARD DRAWINGS DS-13D,DS-13E, AND DS-13F DATED 10/15/12.

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

65% SUBMITTAL - NOT FOR CONSTRUCTION

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
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Mohamad Fakhrriddine, County Engineer

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1842715 N. 6367329 E.
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CAMPO RD (SR94) IMPROVEMENTS AT LYONS VALLEY RD

TRAFFIC SIGNAL INSTALLATION PLAN

SCALE: HOR. 1" = 20' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 25 OF 38 SHEETS

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FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
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KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — DATE 12/31/2015

65% SUBMITTAL - NOT FOR CONSTRUCTION

CONDUCTOR SCHEDULE

AWG SIZE	ø	CIRCUIT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CONDUCTORS 3 / 12 CONDUCTORS		POLE – A	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL CABLES–3 CONDUCT./12 CONDUCT.			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#14	PEU		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#10	LIGHTING		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#6	SIGNAL SERVICE		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TYPE "B" DLC	ø2	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø4	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø6	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø8	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
INTERCONNECT CABLE – SIC			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VIDEO DETECTION CABLE			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EMERGENCY VEHICLE PREEMPTION			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CONDUIT SIZE			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

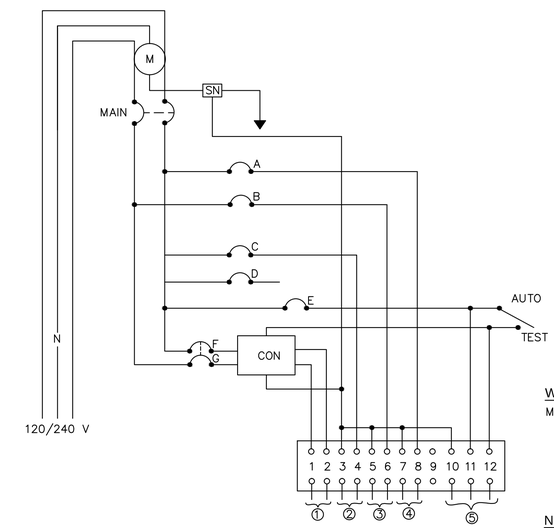
TO BE COMPLETED FOR 100% SUBMITTAL

SIGN LEGEND:

R73-3 (CA)
36" X 36"

R10-12
30" X 36"

WIRING DIAGRAM:



WIRING DIAGRAM:

MAIN 2P – 100 AMP
A – 1P–15 AMP
B – 1P–15 AMP
C – 1P–50 AMP
D – 1P–15 AMP SPARE
E – 1P–15 AMP
F, G – 2P–30 AMP

NOTES:

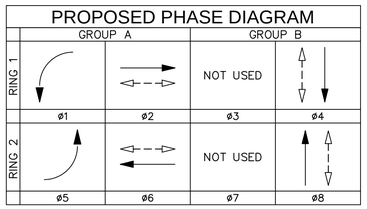
1 – LIGHTING
2 – SIGNAL
3 – TDC
4 – FB
5 – PEU

CON=CONTACTOR

POLE SCHEDULE

POLE DATA No.	TYPE	Ht.	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE LPS	VEH SIG MTG MAST	VEH SIG MTG POLE	PED SIG MTG	PPB ø	PPB QUAD	POLE LOC. A	POLE LOC. B	POLE LOC. C	REMARKS
A	26–4–100	30'	40'	12'	180W	1–MAS 1–MAT	SV–2–T	SP–2–T	6 4	N E	XX'	XX'	XX'	INSTALL R73–3 (CA)
B	23–4–100	30'	35'	12'	180W	1–MAT	SV–2–T	SP–2–T	6 8	N E	XX'	XX'	XX'	INSTALL R10–12
C	18–4–100	30'	30'	12'	180W	1–MAS 1–MAT	SV–2–T	SP–2–T	8 2	W S	XX'	XX'	XX'	
D	18–4–100	30'	25'	12'	180W	1–MAT	SV–2–T	SP–2–T	2 4	N W	XX'	XX'	XX'	

PROPOSED PHASE DIAGRAM



COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
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Mohamad Fakhrriddine, County Engineer

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COORDINATE INDEX
1842715 N. 6367329 E.
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CAMPO RD (SR94) IMPROVEMENTS AT LYONS VALLEY RD

TRAFFIC SIGNAL SCHEDULE AND DETAILS

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 26 OF 38 SHEETS

K:\SND_TPTO\095848001 – JV Design\Design\PS&E Off-site\Plan Sheets\Lyons Valley Rd & Maxfield\848001-TS-04A.dwg Tuesday, May, 27 2014 12:30pm ahman.elmezain

GENERAL NOTES

1. ALL STRIPING AND SIGNING SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE FOLLOWING MANUALS:

DESCRIPTION	EDITION
STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (THE "GREENBOOK")	2012
CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD)	2012
SAN DIEGO COUNTY DESIGN STANDARDS	2012

2. ALL SIGNING AND STRIPING IS SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER PRIOR TO INSTALLATION AND/OR REMOVAL.
3. INSTALLATION OF ALL STRIPING, SIGNS, AND PAVEMENT MARKERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING, PAVEMENT MARKINGS, AND LEGENDS BY SANDBLASTING AND/OR GRINDING WITH THE SEAL. ANY DEBRIS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
5. CONTRACTOR SHALL REPLACE ANY STRIPING, PAVEMENT MARKERS, OR LEGENDS OBLITERATED BY CONSTRUCTION.
6. CONTRACTOR SHALL REMOVE ALL REDUNDANT STRIPING.
7. SIGN POSTS SHALL BE INSTALLED WITH ALUMINUM ALLOY 6063–T6, CLEAR ANODIZED POST PER SAN DIEGO COUNTY DESIGN STANDARD DRAWING NO. DS–13C.
8. ALL RAISED MEDIAN NOSES SHALL BE PAINTED YELLOW.
9. ALL EXISTING SIGNS SHOWN ON THE STRIPING AND SIGNING PLANS SHALL REMAIN UNLESS OTHERWISE NOTED. NEW SIGNS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR, EXCEPT FOR EXISTING SIGNS SPECIFICALLY INDICATED TO BE RELOCATED.
10. STRIPED CROSSWALKS SHALL HAVE AN INSIDE DIMENSION OF 10 FEET UNLESS INDICATED OTHERWISE.
11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS (EXCEPT WITHIN BIKE LANES) SHALL BE THERMOPLASTIC.
12. CONTRACTOR SHALL LAYOUT ALL INTERIM AND FINAL STRIPING, PAVEMENT MARKERS, AND SIGN PLACEMENT. LAYOUT SHALL BE INSPECTED BY THE ENGINEER PRIOR TO INSTALLATION.
13. THE CONTRACTOR SHALL NOTIFY THE COUNTY TRAFFIC ENGINEER AT A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO AND UPON COMPLETION OF STRIPING AND SIGNING TO SCHEDULE A FINAL INSPECTION.
14. ALL REFERENCES TO THE "COUNTY" SHALL EXPLICITLY REFER TO THE "COUNTY OF SAN DIEGO."
15. CONTRACTOR SHALL SUBMIT PRODUCT MANUALS AND SPECIFICATIONS FOR THERMOPLASTIC MATERIALS AT THE PRE–CONSTRUCTION MEETING FOR APPROVAL BY THE PROJECT ENGINEER.
16. CONTRACTOR SHALL REMOVE ALL CONFLICTING RAISED PAVEMENT MARKERS PRIOR TO STRIPING. PAVEMENT THAT IS DAMAGED DUE TO THE REMOVAL OF MARKERS SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE PROJECT ENGINEER.
17. SURFACES WHICH ARE TO RECEIVE NEW STRIPING, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL BE CLEANED OF ALL DIRTY AND LOOSE MATERIALS PRIOR TO INSTALLATION.
18. ALL TRAFFIC STRIPES 6 INCHES OR LESS IN WIDTH SHALL BE INSTALLED WITH TWO COATS OF PAINT. THE FIRST COAT OF PAINT SHALL BE DRY BEFORE APPLICATION OF THE SECOND COAT PER THE LATEST STANDARD SPECIFICATION.
19. FOR ALL ROADWAY CENTERLINES REQUIRING DOUBLE YELLOW TRAFFIC STRIPING, THE CONTRACTOR SHALL CONCURRENTLY PAINT A 3–INCH WIDE BLACK STRIPE BETWEEN THE TWO 4–INCH WIDE YELLOW STRIPES.
20. ALL LIMIT LINES/STOP BARS SHALL BE LOCATED AT THE PROLONGATION OF THE CENTER DELTA OF THE CURB RETURN OR BEHIND THE PEDESTRIAN ACCESS RAMP, UNLESS OTHERWISE SPECIFIED. IF A STRIPED CROSSWALK EXISTS, THE LIMIT LINE/STOP BAR SHALL BE LOCATED 4 FEET IN ADVANCE OF THE CROSSWALK.
21. ALL STRIPING SHALL BEGIN AND TERMINATE AT QUARTER DELTA OF THE CURB, OR BACK OF THE LIMIT LINE/STOP BAR, UNLESS OTHERWISE SPECIFIED.
22. "STOP" PAVEMENT MARKINGS SHALL BE INSTALLED 8 FEET IN ADVANCE OF THE LIMIT LINE/STOP BAR, CONSISTENT WITH THE LATEST EDITION OF THE CALIFORNIA MUTCD.
23. CONTRACTOR SHALL INSTALL BLUE RETROFLECTIVE RAISED PAVEMENT MARKERS TO DESIGNATE THE LOCATION OF ALL FIRE HYDRANTS, CONSISTENT WITH THE LATEST EDITION OF THE CALIFORNIA MUTCD.
24. STANDARD STRIPING AND PAVEMENT MARKER DETAILS AND DIMENSIONS/SPACING FOR PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITIONS OF THE CALTRANS STANDARD PLANS AND CALIFORNIA MUTCD.
25. APPLICATION OF TRAFFIC STRIPES, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL CONFORM TO THE LATEST EDITION OF THE CALTRANS STANDARD SPECIFICATIONS.
26. ALL SIGNS PURCHASED AND INSTALLED BY THE CONTRACTOR SHALL CONFORM TO THE STANDARDS PROVIDED IN THE LATEST EDITION OF THE CALIFORNIA MUTCD, INCLUDING SIGN SIZE, SHAPE, COLOR, SYMBOLS, RETROREFLECTIVITY, VERTICAL AND LATERAL MOUNTING OFFSETS, ECT. ALL SIGN FACE REFLECTIVE SHEETS SHALL BE HIGH INTENSITY GRADE WITH A CLEAR PROTECTIVE OVERLAY FILM (I.E. ANTI–GRAFFITI COATING).
27. ALL PEDESTRIAN CROSSING SIGNS, PEDESTRIAN ADVANCED WARNING SIGNS, AND SUPPLEMENTAL PLAQUES SHALL BE FLUORESCENT GREEN IN COLOR.
28. CONTRACTOR IS RESPONSIBLE FOR REPAINTING ALL CURB MARKINGS WITHIN THE PROJECT LIMITS.

LEGEND

ITEM:	STANDARD DRWG NO.	EXISTING:	NEW / RELOCATED:
1. LANE WIDTH		(XX')	XX'
2. STREET NAME SIGN	DS–13A TO DS–13E	SNS	SNS
3. SIGN LOCATION (SINGLE POST)			
4. SIGN LOCATION (DOUBLE POST)			
5. SIGN LOCATION (MOUNTED ON LUMINAIRE OR SIGNAL POLE)			
6. BIKE LANE ARROW	CALTRANS A24A		
7. BIKE LANE SYMBOL WITH PERSON	CALTRANS A24C		
8. "AHEAD" PAVEMENT MARKING	CALTRANS A24D	AHEAD	AHEAD
9. "BIKE" PAVEMENT MARKING	CALTRANS A24D	BIKE	BIKE
10. "LANE" PAVEMENT MARKING	CALTRANS A24D	LANE	LANE
11. "STOP" PAVEMENT MARKING	CALTRANS A24D	STOP	STOP
12. TYPE I 10' THROUGH ARROW	CALTRANS A24A		
13. TYPE I 24' THROUGH ARROW	CALTRANS A24A		
14. TYPE II THROUGH–LEFT ARROW	CALTRANS A24B		
15. TYPE II THROUGH–RIGHT ARROW	CALTRANS A24B		
16. TYPE III LEFT–TURN ARROW	CALTRANS A24B		
17. TYPE III RIGHT–TURN ARROW	CALTRANS A24B		
18. TYPE VI ARROW	CALTRANS A24A		
19. TYPE VII THROUGH–LEFT ARROW	CALTRANS A24A		
20. TYPE IV LEFT–TURN ARROW	CALTRANS A24A		
21. TYPE IV RIGHT–TURN ARROW	CALTRANS A24A		
22. TYPE VII THROUGH–RIGHT ARROW	CALTRANS A24A		
23. LANE LINE PATTERN (DETAIL 12)	CALTRANS A20A		
24. TWO–DIRECTION NO–PASSING PATTERN (DETAIL 22)	CALTRANS A20A		
25. LEFT EDGELINE (DETAIL 25)	CALTRANS A20B		
26. RIGHT EDGELINE (DETAIL 27B)	CALTRANS A20B		
27. TWO–WAY LEFT TURN LANE (DETAIL 32)	CALTRANS A20B		
28. WHITE CHANNELIZING LINE (DETAIL 38)	CALTRANS A20D		
29. BIKE LANE LINE (DETAIL 39)	CALTRANS A20D		
30. BIKE INTERSECTION LINE (DETAIL 39A)	CALTRANS A20D		
31. LANE LINE EXTENSION THROUGH INTERSECTIONS (DETAIL 40)	CALTRANS A20D		

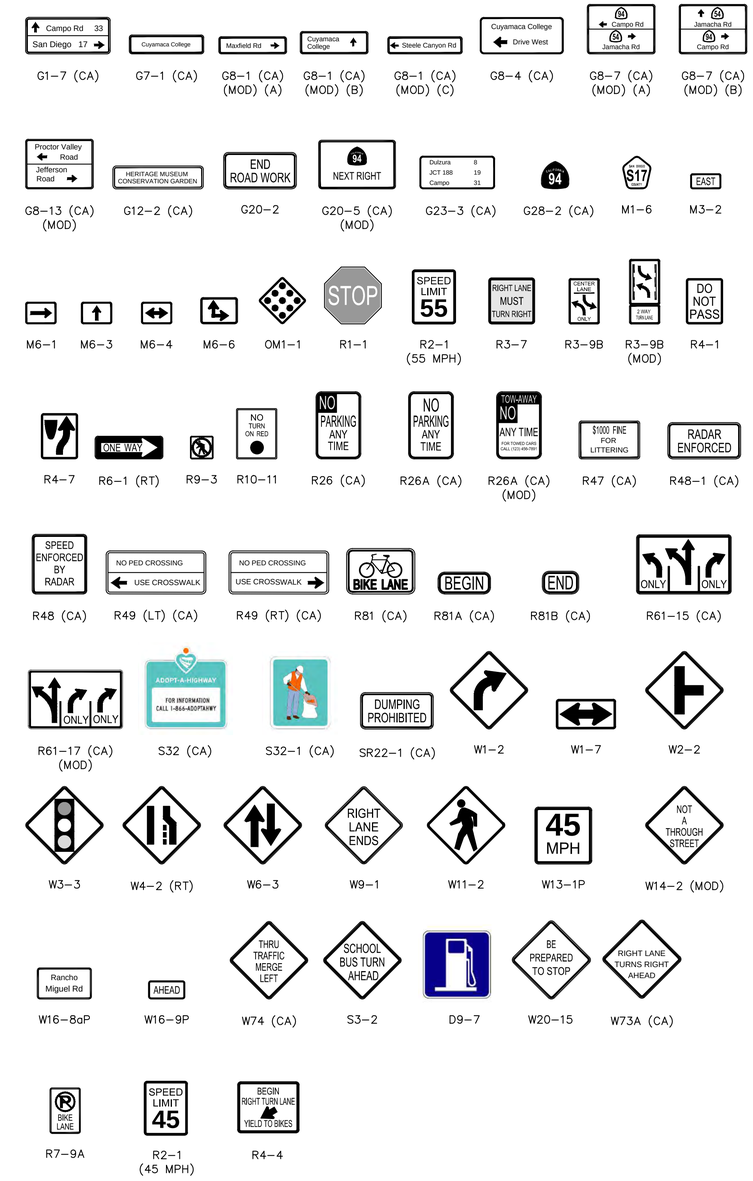
PLANS	BY	DATE
DESIGNED		04/2014
CHECKED	X. XXXXX	

REGISTERED PROFESSIONAL ENGINEER — CONRADO CESAR ESPELETA — 15371 — STATE OF CALIFORNIA — PRELIMINARY NOT FOR CONSTRUCTION

KIMLEY–HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619–234–9411

REGISTERED CIVIL ENGINEER — DATE

SIGN LEGEND:



65% SUBMITTAL - NOT FOR CONSTRUCTION

K:\SND_TPTD\095848001 – JIV Design\Design\PS&E Off-site\Plan Sheets\Steele Canyon Rd\848001-SN-00.dwg Tuesday, May. 27 2014 11:25am othman.elmezain

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619–234–9411
WWW.KIMLEY–HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1844571 N. 6358118 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT STEELE CANYON RD

SIGNING AND PAVEMENT MARKING NOTES

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 22 OF 33 SHEETS

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

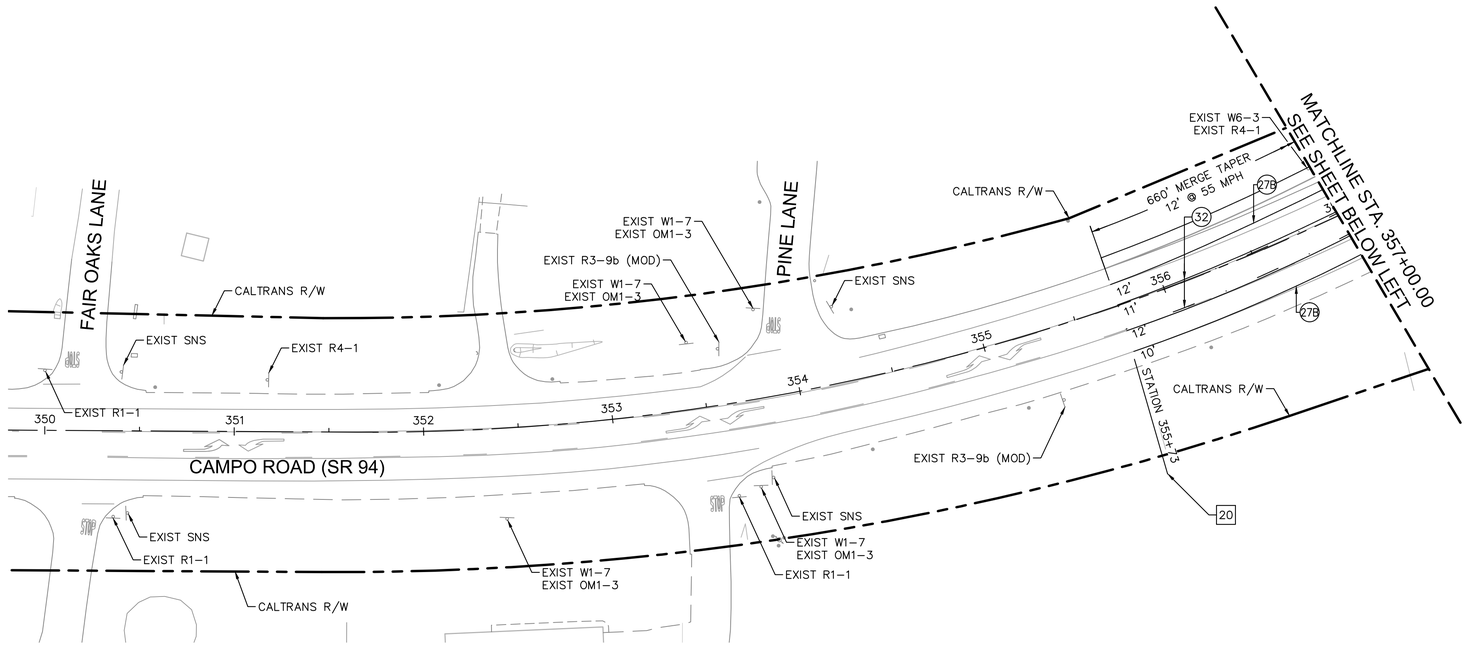
-1 0 1 2 3 4 5 6 7 8 9 10

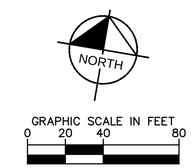
PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

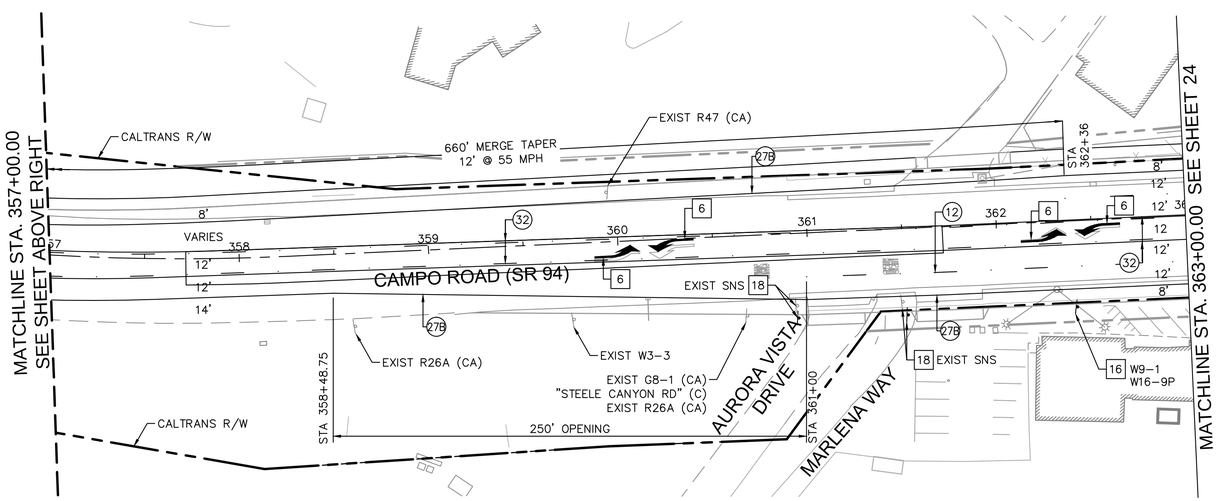
PRELIMINARY NOT FOR CONSTRUCTION

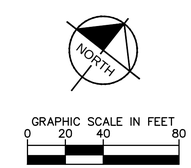




STRIPING LEGEND

- (12) 4" WHITE LANE LINE, STD. PLAN A20A, DETAIL 12
- (27B) 4" WHITE EDGELINE, STD. PLAN A20B, DETAIL 32
- (32) TWO-WAY LEFT TURN LANE, STD. PLAN A20B, DETAIL 32





SIGNING AND MARKING NOTES

- [6] TYPE III(L) ARROW, STD. PLAN A24B
- [16] FURNISH AND INSTALL NEW SIGN.
- [18] RELOCATE EXISTING SIGN(S) TO NEW LOCATION.

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1844571 N. 6358118 E.
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FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT STEELE CANYON RD

SIGNING AND PAVEMENT MARKING PLAN

SCALE: HOR. 1" = 40' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 23 OF 33 SHEETS

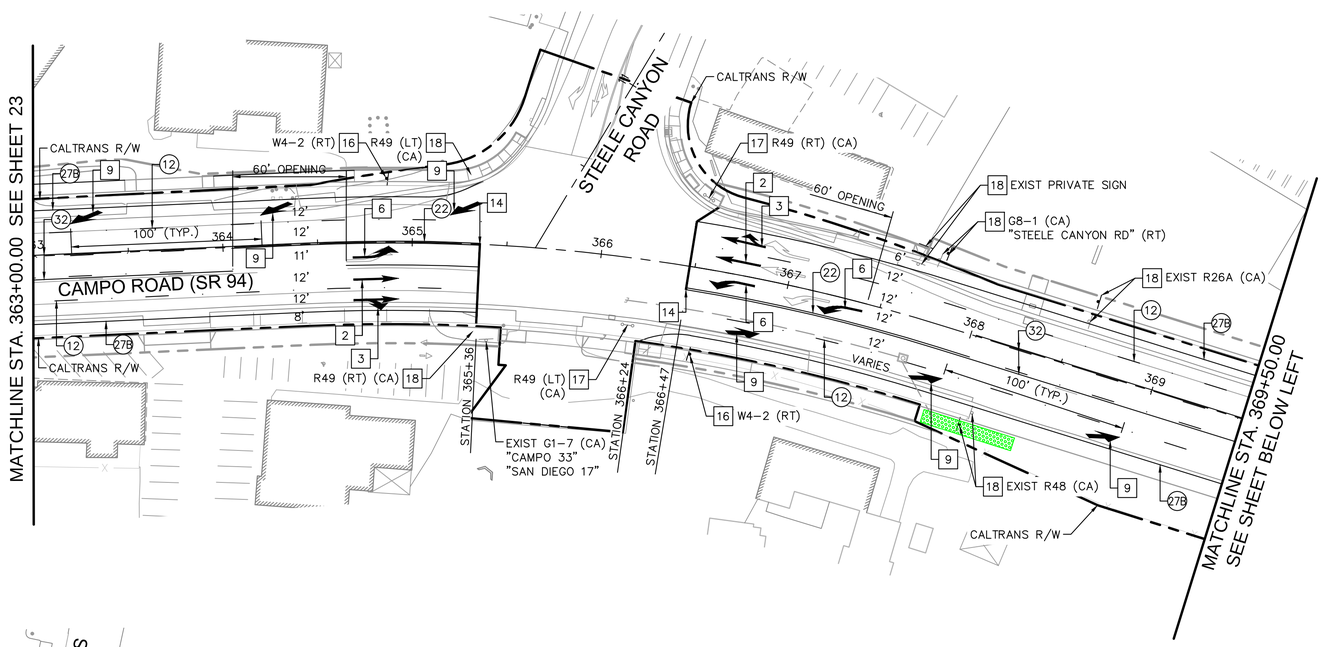
FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

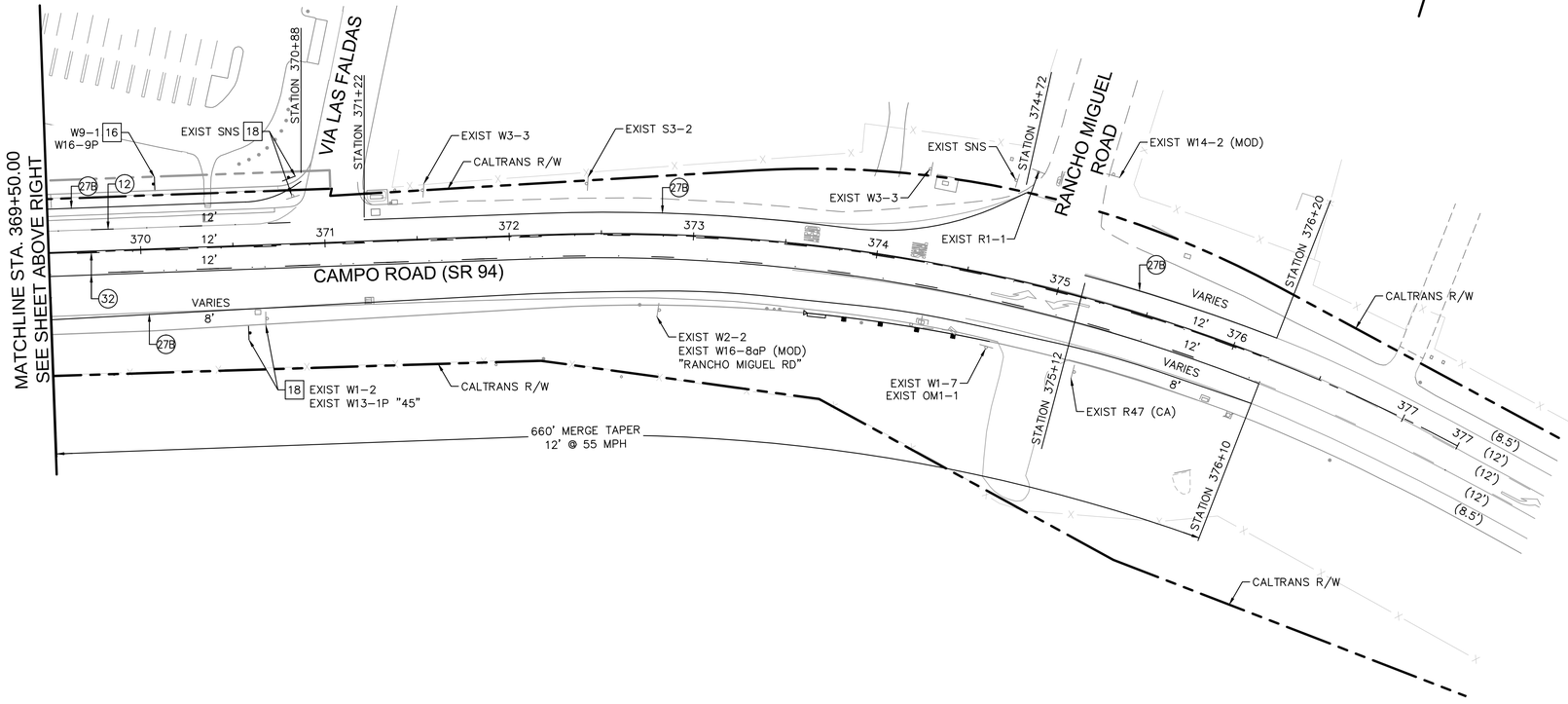
PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — DATE 12/31/2015

PRELIMINARY NOT FOR CONSTRUCTION





NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

STRIPING LEGEND

- (12) 4" WHITE LANE LINE, STD. PLAN A20A, DETAIL 12
- (22) 4" DOUBLE YELLOW LINE, STD. PLAN A20A, DETAIL 22
- (27B) 4" WHITE EDGELINE, STD. PLAN A20B, DETAIL 27B
- (32) TWO-WAY LEFT TURN LANE, STD. PLAN A20B, DETAIL 32

SIGNING AND MARKING NOTES

- 2 TYPE I 24' ARROW, STD. PLAN A24A
- 3 TYPE II(R) ARROW, STD. PLAN A24B
- 6 TYPE III(L) ARROW, STD. PLAN A24B
- 9 TYPE VI ARROW, STD.PLAN A24A
- 14 12" WHITE LIMIT LINE, STD. PLAN A24E
- 16 FURNISH AND INSTALL NEW SIGN.
- 17 REMOVE AND SALVAGE EXISTING SIGN.
- 18 RELOCATE EXISTING SIGN(S) TO NEW LOCATION.

65% SUBMITTAL - NOT FOR CONSTRUCTION

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
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Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
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REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1844571 N. 6358118 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT STEELE CANYON RD

SIGNING AND PAVEMENT MARKING PLAN

SCALE: HOR. 1" = 40' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 24 OF 33 SHEETS

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

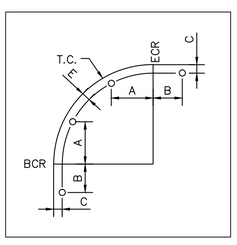
KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

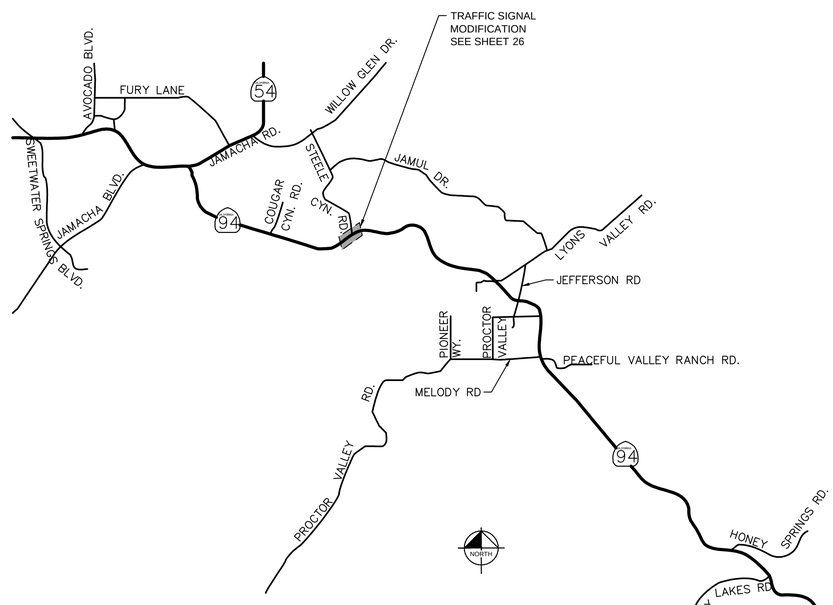
PRELIMINARY NOT FOR CONSTRUCTION

GENERAL NOTES

1. THE LOCATION OF ALL UNDERGROUND UTILITIES IS APPROXIMATE, THE CONTRACTOR SHALL DETERMINE THE DEPTH OF ALL UTILITIES, INCLUDING THOSE NOT SHOWN ON THE PLANS, AND VERIFY ALL CONDITIONS ON THE JOB.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY ALL UTILITIES AND AGENCIES AT LEAST 48 HOURS IN ADVANCE.
3. ALL LOOPS SHALL BE CENTERED IN TRAVEL LANES UNLESS OTHERWISE NOTED.
4. ALL PULL BOXES ARE NUMBER 5, AND CONDUIT IS 2-INCH UNLESS OTHERWISE NOTED.
5. ALL SIGNAL HEADS SHALL BE TWELVE-INCH IN DIAMETER WITH BACK PLATES. ALL RED, YELLOW, AND GREEN INDICATIONS SHALL BE L.E.D.
6. PEDESTRIAN HEADS AND PUSHBUTTON SIGNS SHALL BE INTERNATIONAL SYMBOLS. PEDESTRIAN SIGNALS SHALL BE L.E.D., SIDE BY SIDE.
7. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR TRAFFIC SIGNAL INSTALLATION PER CALTRANS TRAFFIC MANUAL TO THE COUNTY OF SAN DIEGO TRAFFIC ENGINEERING SECTION A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION. FOR INFORMATION CALL (858) 874-4025.
8. ALL TRAFFIC SIGNAL POLE FOUNDATIONS SHALL HAVE A 3-INCH CONDUIT INSTALLED TO THE ADJACENT PULL BOX.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF LOOP DETECTORS, TRAFFIC STRIPING, PAVEMENT MARKING, PARKING REMOVAL, AND TRAFFIC SIGNING, AS SHOWN ON THE PLAN:
   a) THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE COUNTY TRAFFIC ENGINEERING SECTION FOR THE LOOP LOCATIONS, STRIPING, PAVEMENT, MARKINGS, PARKING REMOVAL, AND SIGN LOCATIONS PRIOR TO PAINTING AND INSTALLATION. CONTRACTOR SHALL USE LEAD-FREE PAINT FOR ALL STRIPING AND PAVEMENT MARKINGS.
   b) THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL CONFLICTING STRIPING AND PAVEMENT MARKINGS AND SANDBLASTING/GRINDING AND SAND SEALING.
10. CONTRACTOR SHALL NOT ERECT ANY SIGNAL STANDARDS MORE THAN THREE WEEKS PRIOR TO SCHEDULED TRAFFIC SIGNAL TURN ON.
11. FLASHING SIGNAL OPERATION SHALL BE RED ON ALL PHASES. PEDESTRIAN SIGNALS SHALL BE BLACK DURING FLASHING OPERATION.
12. ALL TRAFFIC SIGNAL IMPROVEMENTS SHALL BE INSTALLED IN COORDINATION WITH THE SIGNING AND STRIPING CONTRACTOR.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED BY APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT.
14. RAISED PAVEMENT MARKERS SHALL BE PLACED ON ALL NEW CENTERLINES AND LANE LINE STRIPING PER CALTRANS STANDARD PLANS.
15. CONTRACTOR SHALL REPLACE ALL STRIPING, PAVEMENT MARKERS, AND LEGENDS OBLITERATED BY THIS PROJECT.
16. CONTRACTOR SHALL REMOVE/TRIM VEGETATION PER ENGINEER.
17. ALL CONDUIT PLACED IN STREET SHALL HAVE A MINIMUM OF 24" COVER (R.S.D.) G-34.



POLE PLACEMENT DETAIL
N.T.S



VICINITY MAP
NOT TO SCALE

LEGEND

ITEM:	STANDARD DWG. NO.:	EXISTING:	NEW / RELOCATED:
1. SAFETY LIGHTING/LUMINAIRE, LPS 180 WATT EQUIVALENT	PER PLAN		
2. TRAFFIC SIGNAL STANDARD, MAST ARM, SNS, SIGN, VIDEO DETECTOR, VEHICLE INDICATIONS, EVP, PEDESTRIAN INDICATION, AND LUMINAIRE	PER PLAN		
3. EMERGENCY VEHICLE PREEMPTION (EVPE)	PER PLAN		
4. STREET NAME SIGNS (SNS)	SAN DIEGO COUNTY STD. DWG. NO. DS-13D & DS-13E		
5. PEDESTRIAN INDICATION	PER PLAN		
6. 170E CONTROLLER CABINET	CALTRANS & SAN DIEGO COUNTY SPECS.		
7. SERVICE POINT	PER PLAN		
9. ADVANCED VEHICLE DETECTION ZONE (LOOPS)	PER PLAN		
10. VIDEO DETECTION ZONE	PER PLAN		
11. CONDUIT	PER PLAN		
17. SIGN ON TRAFFIC SIGNAL EQUIPMENT	PER PLAN		
18. PULL BOX	PER PLAN		
19. VIDEO DETECTOR CAMERA	PER PLAN		
20. THROUGH VEHICLE INDICATION			
21. PROTECTED VEHICLE INDICATION			

65% SUBMITTAL - NOT FOR CONSTRUCTION

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
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Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
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REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX: 1844571 N. 6358118 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT STEELE CANYON RD

TRAFFIC SIGNAL NOTES

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 25 OF 33 SHEETS

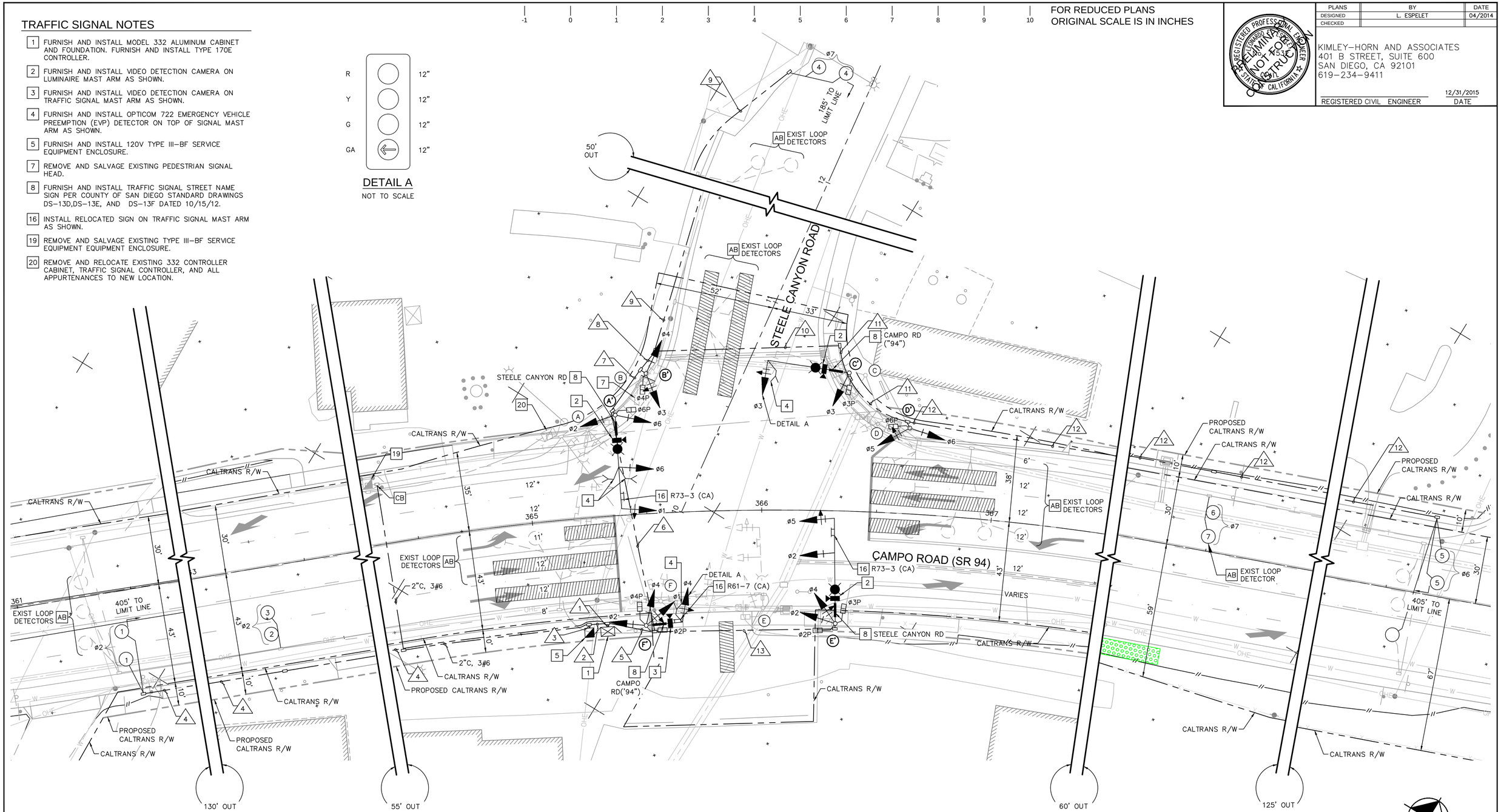
K:\SND_TPTO\095848001 - JV Design\Design\PS&E Off-site\Plan Sheets\Steele Canyon Rd\848001-TS-00.dwg Tuesday, May. 27 2014 11:26am othman.elmezain

TRAFFIC SIGNAL NOTES

1. FURNISH AND INSTALL MODEL 332 ALUMINUM CABINET AND FOUNDATION. FURNISH AND INSTALL TYPE 170E CONTROLLER.
2. FURNISH AND INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM AS SHOWN.
3. FURNISH AND INSTALL VIDEO DETECTION CAMERA ON TRAFFIC SIGNAL MAST ARM AS SHOWN.
4. FURNISH AND INSTALL OPTICOM 722 EMERGENCY VEHICLE PREEMPTION (EVP) DETECTOR ON TOP OF SIGNAL MAST ARM AS SHOWN.
5. FURNISH AND INSTALL 120V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE.
7. REMOVE AND SALVAGE EXISTING PEDESTRIAN SIGNAL HEAD.
8. FURNISH AND INSTALL TRAFFIC SIGNAL STREET NAME SIGN PER COUNTY OF SAN DIEGO STANDARD DRAWINGS DS-13D,DS-13E, AND DS-13F DATED 10/15/12.
16. INSTALL RELOCATED SIGN ON TRAFFIC SIGNAL MAST ARM AS SHOWN.
19. REMOVE AND SALVAGE EXISTING TYPE III-BF SERVICE EQUIPMENT EQUIPMENT ENCLOSURE.
20. REMOVE AND RELOCATE EXISTING 332 CONTROLLER CABINET, TRAFFIC SIGNAL CONTROLLER, AND ALL APPURTENANCES TO NEW LOCATION.

DETAIL A
NOT TO SCALE

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES



PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — 12/31/2015 DATE

PRELIMINARY NOT FOR CONSTRUCTION

65% SUBMITTAL - NOT FOR CONSTRUCTION

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COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
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COORDINATE INDEX
1844571 N. 6358118 E.
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CAMPO RD (SR94) IMPROVEMENTS AT STEELE CANYON RD

TRAFFIC SIGNAL MODIFICATION PLAN

SCALE: HOR. 1" = 20' VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 26 OF 33 SHEETS

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED	L. ESPELET	04/2014
CHECKED		

KIMLEY-HORN AND ASSOCIATES
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SAN DIEGO, CA 92101
619-234-9411

REGISTERED CIVIL ENGINEER — DATE 12/31/2015

65% SUBMITTAL - NOT FOR CONSTRUCTION

CONDUCTOR SCHEDULE

AWG SIZE	ø	CIRCUIT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CONDUCTORS 3 / 12 CONDUCTORS		POLE – A	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		POLE – G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL CABLES–3 CONDUCT./12 CONDUCT.			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#14	PEU		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#10	LIGHTING		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
#6	SIGNAL SERVICE		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TYPE "B" DLC	ø2	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø4	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø6	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	ø8	DLC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
INTERCONNECT CABLE – SIC					–	–	–	–	–	–	–	–	–	–	–	–	–	–
VIDEO DETECTION CABLE			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EMERGENCY VEHICLE PREEMPTION			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CONDUIT SIZE			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

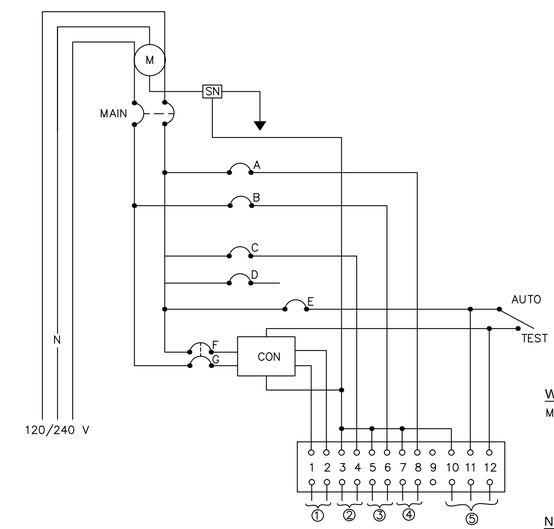
TO BE COMPLETED FOR 100% SUBMITTAL

SIGN LEGEND:

R73-3 (CA)
36" X 36"

R61-7 (CA)
36" X 30"

WIRING DIAGRAM:



WIRING DIAGRAM:

MAIN 2P – 100 AMP
A – 1P–15 AMP
B – 1P–15 AMP
C – 1P–50 AMP
D – 1P–15 AMP SPARE
E – 1P–15 AMP
F, G – 2P–30 AMP

NOTES:

① – LIGHTING
② – SIGNAL
③ – TDC
④ – FB
⑤ – PEU

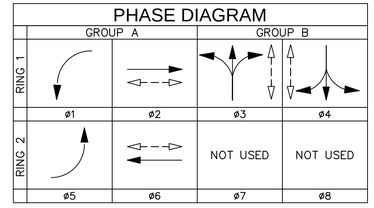
CON=CONTACTOR

POLE SCHEDULE

POLE DATA No.	TYPE	Ht.	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE LPS	VEH SIG MTG MAST	VEH SIG MTG POLE	PED SIG MTG	PPB ø	PPB QUAD	POLE LOC. A	POLE LOC. B	POLE LOC. C	REMARKS
A	26–4–80	30'	40'	12'	180W	1–MAS 1–MAT	SV–2–T SV–1–T	SP–1–T	4	E ←	EX.	EX.	EX.	REMOVE AND SALVAGE EX. POLE, RELOCATE EX. SIGNS AND EQUIPMENT TO LOCATION A'
A'	**26–4–100**	**30'**	**40'**	**12'**	**180W**	**1–MAS 1–MAT**	**SV–2–T SV–1–T**	**SP–1–T**	**4**	**W →**	**XX'**	**XX'**	**XX'**	**REUSE EX. SIGNS AND EQUIPMENT FROM LOCATION A**
B	1–A	10'	–	–	–	–	TV–1–T	SP–1–T	6	S →	EX.	EX.	EX.	REMOVE AND SALVAGE EX. PED HEAD
B'	**1–A**	**10'**	**–**	**–**	**–**	**–**	**TV–1–T**	**SP–1–T**	6	**S →**	**XX'**	**XX'**	**XX'**	**REUSE EX. EQUIPMENT FROM LOCATION C**
C	26–3–80	30'	40'	10'	180W	1–MAS–4B	SV–1–T	–	–	–	EX.	EX.	EX.	REMOVE AND SALVAGE EX. POLE, RELOCATE EX. EQUIPMENT TO LOCATION C'
C'	**24–3–100**	**30'**	**35'**	**12'**	**180W**	**1–MAS–4B**	**SV–1–T**	**SP–1–T**	**6**	**S ←**	**XX'**	**XX'**	**XX'**	**REUSE EX. EQUIPMENT FROM LOCATION C**
D	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	6	S ←	EX.	EX.	EX.	RELOCATE POLE AND EQUIPMENT TO LOCATION D'
D'	**1–A**	**10'**	**–**	**–**	**–**	**–**	**TV–2–T**	**SP–2–T**	**3**	**W →**	**XX'**	**XX'**	**XX'**	**REUSE POLE AND EQUIPMENT FROM LOCATION D**
E	24–4–80	30'	35'	*	180W	1–MAS 1–MAT	SV–2–TD	SP–1–T	2	N →	EX.	EX.	EX.	REMOVE AND SALVAGE EX. POLE AND SNS, RELOCATE EX. EQUIPMENT TO LOCATION E'
E'	**26–4–100**	**30'**	**45'**	**12'**	**180W**	**1–MAS 1–MAT**	**SV–2–T**	**SP–2–T**	**2 / 3**	**N → / W ←**	**XX'**	**XX'**	**XX'**	**REUSE EX. EQUIPMENT FROM LOCATION E**
F	18–3–80	30'	20'	–	–	1–MAS–4B	SV–3–TC	SP–2–T	2 / 4	N ← / E →	EX.	EX.	EX.	REMOVE AND SALVAGE EX. POLE AND SNS, REUSE EX. EQUIPMENT AT LOCATION F'
F'	**17–3–100**	**30'**	**15'**	**–**	**–**	**1–MAS**	**SV–3–T**	**SP–1–T**	**2**	**N ←**	**XX'**	**XX'**	**XX'**	**REUSE EX. EQUIPMENT FROM LOCATION F**

BOLD=NEW
* LUMINAIRE NOT STANDARD LENGTH

PHASE DIAGRAM



COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5500 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

RECOMMENDED BY: _____ DATE _____
_____ DATE _____
APPROVED BY: _____ DATE _____
Mohamad Fakhrriddine, County Engineer

Kimley»Horn
401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX
1844571 N. 6358118 E.
CONST. COMPL. _____
FIELD REVISIONS _____

CAMPO RD (SR94) IMPROVEMENTS AT STEELE CANYON RD

TRAFFIC SIGNAL SCHEDULE AND DETAILS

SCALE: HOR. N/A VERT. N/A
W.A. XXXX R.S. XXXX
SP
SHEET 27 OF 33 SHEETS

K:\SND_TPTO\095848001 – JV Design\Design\PS&E Off-site\Plan Sheets\Steele Canyon Rd\848001-TS-03A.dwg Tuesday, May, 27 2014 11:28am othman.elmezain

APPENDIX B

- Existing Traffic Counts Data

San Diego County Road Segments

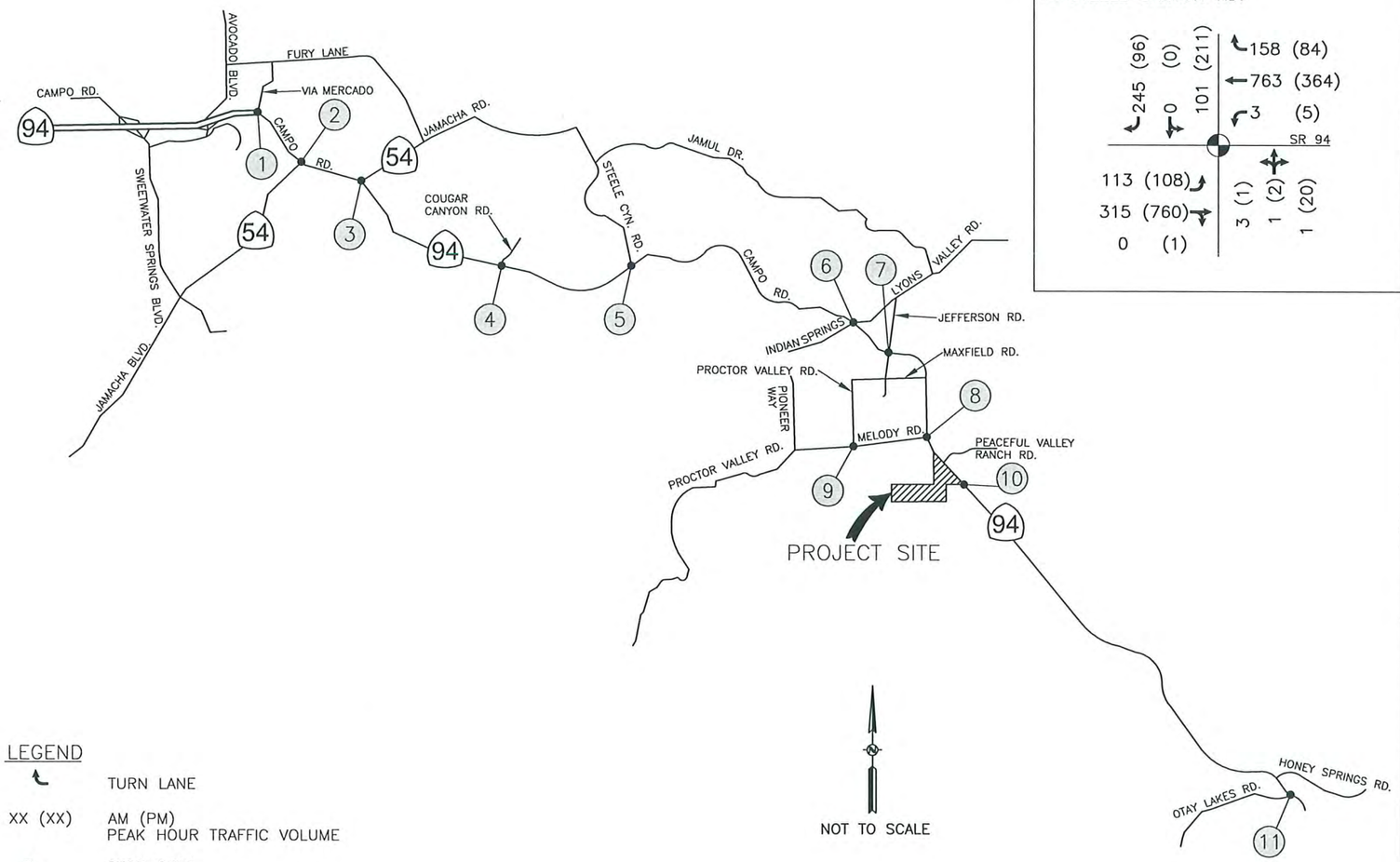
As shown in Table 9, all of the road segments under San Diego County jurisdiction operate at LOS C or better, thereby conforming to the County's LOS D standard.

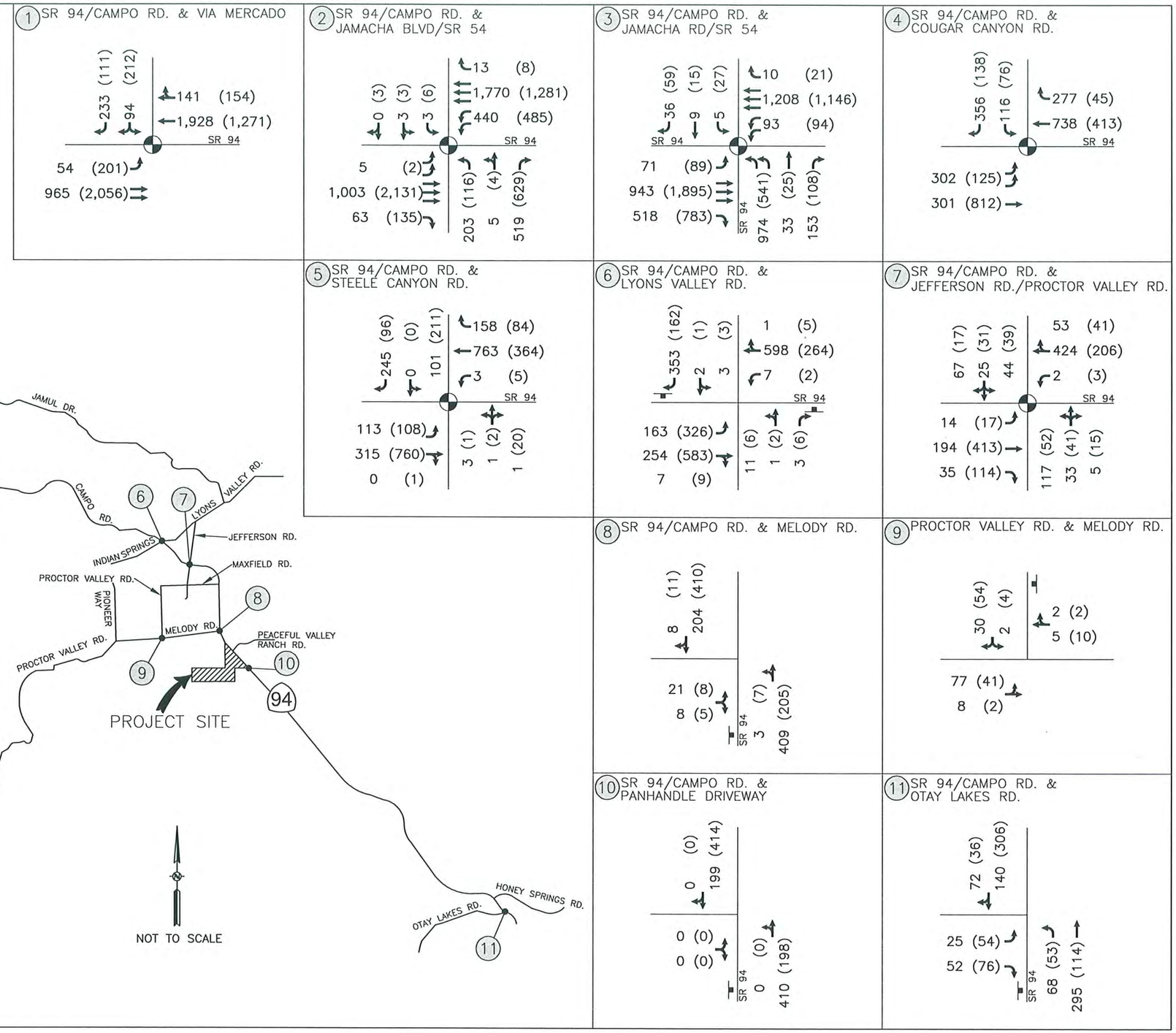
Table 9
Roadway Segment Level of Service Summary
Existing Conditions

Roadway Segment	Lanes/ Classification	Roadway Capacity[1]	Daily Traffic Volume[2]	V/C[3] Ratio	LOS[4]
Jamacha Blvd. – SR 94 to Sweetwater Springs Boulevard	4 Lanes/ Major Road	37,000 VPD[5]	17,000 VPD	0.46	B
Jamacha Rd. – SR 94 to Fury Lane	6 Lanes/ Prime Arterial	57,000 VPD	35,500 VPD	0.62	B
Steele Canyon Rd. – SR 94 to Jamul Dr.	2 Lanes/Rural Light Collector	16,200 VPD	5,930 VPD	0.37	C
Lyons Valley Rd. – SR 94 to Jefferson Rd.	2 Lanes/ Rural Light Collector	16,200 VPD	6,720 VPD	0.41	C
Melody Rd – SR 94 to Proctor Valley Rd.	2 Lanes/Rural Light Collector	16,200 VPD	275 VPD	0.02	A
Proctor Valley Rd. – SR 94 to Melody Rd.	2 Lanes/Rural Light Collector	16,200 VPD	1,710 VPD	0.11	A
Proctor Valley Rd. – Melody Rd to Pioneer Way	2 Lanes/Rural Light Collector	16,200 VPD	1,630 VPD	0.10	A

Notes:
1 Reference: *Public Road Standards* (County of San Diego, Department of Public Works, Adopted July 14, 1999).
2 Counts conducted Tuesday, May 19, 2009.
3 Volume/capacity.
4 Level of service.
5 Vehicles per day.

Dist	Route	CO		Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
11	94	SD	R	13.333	AVOCADO BLVD	5,000	59,000	57,000	3,700	44,000	42,500
11	94	SD		14.33	JAMACHA BLVD	3,700	44,000	42,500	5,400	64,000	62,000
11	94	SD		14.86	JCT. RTE. 54 NORTH	5,400	64,000	62,000	1,400	16,800	16,400
11	94	SD		17.352	STEEL CANYON RD	1,300	15,300	14,900	1,450	17,500	17,000
11	94	SD		19.4	LYONS VALLEY RD	1,450	17,500	17,000	950	10,800	10,600
11	94	SD		24.554	HONEY SPRINGS RD	700	7,700	7,500	570	6,400	6,300
11	94	SD		24.731	OTAY LAKES	570	6,400	6,300	570	6,600	6,500
11	94	SD		28.3	DULZURA POST OFFICE	570	6,600	6,500	620	6,300	6,200
11	94	SD		29.872	MARRON VALLEY	620	6,300	6,200	610	6,400	6,100
11	94	SD		38.97	JCT. RTE. 188 SOUTH	540	5,700	5,400	200	1,900	1,850
11	94	SD		41.393	POTRERO VALLEY RD	200	1,900	1,850	120	1,300	1,250
11	94	SD		52.15	BUCKMAN SPRINGS RD	170	1,800	1,750	200	1,850	1,750
11	94	SD		61.701	LIVE OAKS SPRS RD	60	500	450	60	500	450
11	94	SD		64.229	WEST JUNCTION OLD HWY 80	70	600	560	150	1,300	1,250
11	94	SD		64.817	JEWEL VALLEY/ RIBBONWOOD	150	1,300	1,250	120	1,200	1,050
11	94	SD		65.375	JCT. RTE. 8	120	1,200	1,050			
8	95	RIV		0	HOBSON WAY				350	3,400	3,200
8	95	RIV		3.52	SIXTH AVE	330	3,150	2,800	290	2,400	2,150
8	95	RIV		10.54	PALO VERDE DAM RD	230	2,050	1,800	260	2,100	1,800
8	95	RIV		36.197	RIVERSIDE/S BERN CO LINE	260	2,000	1,750			
8	95	SBD		0	RIVERSIDE/S BERN CO LINE				220	1,700	1,450
8	95	SBD		9.684	JCT. RTE. 62	220	1,700	1,450	350	3,250	2,700
8	95	SBD		37.3	HAVASU LAKE RD	320	3,250	2,700	520	6,000	5,100
8	95	SBD		57.275	EAST JCT. RTE. 40	550	6,300	5,400	550	6,300	5,400
8	95	SBD	R	57.244	WEST JCT. RTE. 40	550	6,300	5,400	330	3,850	3,000
8	95	SBD		63.944	ARROWHEAD JUNCTION	330	3,850	3,000	460	4,200	3,300
8	95	SBD		80.453	NEVADA STATE LINE	460	4,200	3,300			
1	96	HUM		0	WILLOW CREEK, JCT. RTE. 299				290	3,150	2,900
1	96	HUM		0.1	STANDARD OIL LANE	290	3,150	2,900	200	2,050	1,900
1	96	HUM		3.59	WILLOW CREEK, NORTH	200	2,050	1,900	190	2,050	1,900
1	96	HUM		10.95	SOUTH LIMITS HOOPA	380	4,100	3,700	350	3,900	3,500
1	96	HUM		12.83	NORTH LIMITS HOOPA	240	2,650	2,400	200	2,500	2,150
1	96	HUM		23.086	WEITCHPEC, JCT. RTE. 169	70	750	690	50	520	450
1	96	HUM		37.87	EYESEE RD	110	1,100	900	120	1,200	900
1	96	HUM		38.5	ORLEANS, NORTH	110	1,200	900	110	1,200	900
1	96	HUM	R	38.773	KLAMATH RIVER, NORTH	90	560	520	100	570	520
1	96	HUM	R	44.979	HUMBOLDT/SISKIYOU CO LINE	80	490	420			
2	96	SIS	R	0	HUMBOLDT/SISKIYOU CO LINE				70	490	410



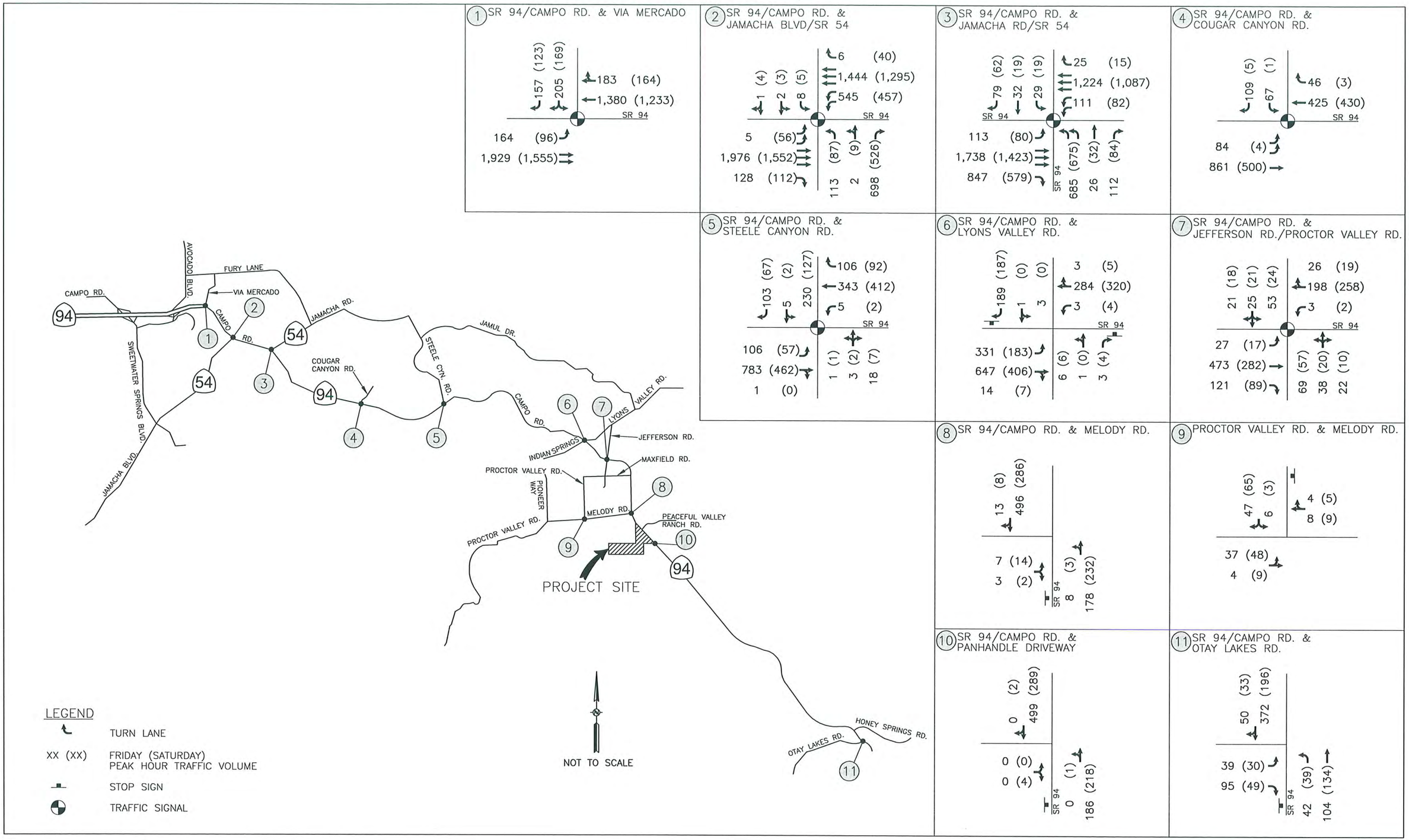


MRO ENGINEERS
2202 Plaza Drive
Rocklin, CA 95765
Phone (916) 783-3838
Fax (916) 783-5003
www.mroengineers.com

PEAK HOUR TRAFFIC VOLUMES - WEEKDAY AM & PM
EXISTING CONDITIONS

FIGURE 2

N:\2009\20902 Jamul Alternatives Analysis and Traffic Study\Working\CADD\TRAFFIC EXHIBIT.dwg Jul 02, 2010-09:59 am



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Fax (916) 783-5003
www.mroengineers.com

PEAK HOUR TRAFFIC VOLUMES - FRIDAY PM & SATURDAY PM
EXISTING CONDITIONS

FIGURE 3

N:\2009\20902 Jamul Alternatives Analysis and Traffic Study\Working\CADD\TRAFFIC EXHIBIT.dwg Jul 02, 2010-09:59 am

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_4249_001

Day: THURSDAY

City: City of Jamul

Date: 9/15/2011

AM

NS/EW Streets:	State Route 94 (Campo Rd)			State Route 94 (Campo Rd)			Honey Springs Rd			Honey Springs Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	0	0	0	0	1	0	
7:00 AM		98	4	3	25					2		13	145
7:15 AM		73	3	8	23					13		13	133
7:30 AM		83	3	3	37					8		23	157
7:45 AM		80	2	2	25					3		18	130
8:00 AM		48	2	6	26					3		15	100
8:15 AM		53	5	5	28					6		12	109
8:30 AM		46	1	7	28					2		17	101
8:45 AM		57	2	6	20					1		12	98
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	538	22	40	212	0	0	0	0	38	0	123	973
APPROACH %'s :	0.00%	96.07%	3.93%	15.87%	84.13%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	23.60%	0.00%	76.40%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	334	12	16	110	0	0	0	0	26	0	67	565
PEAK HR FACTOR :		0.848			0.788			0.000			0.750		0.900

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_4249_001

Day: THURSDAY

City: City of Jamul

Date: 9/15/2011

PM

NS/EW Streets:	State Route 94 (Campo Rd)			State Route 94 (Campo Rd)			Honey Springs Rd			Honey Springs Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	0	0	0	0	1	0	
4:00 PM		41	5	14	77					2		5	144
4:15 PM		37	4	18	92					2		7	160
4:30 PM		33	7	21	82					3		8	154
4:45 PM		28	8	23	94					3		10	166
5:00 PM		33	8	11	82					5		10	149
5:15 PM		29	4	17	86					2		8	146
5:30 PM		27	6	20	88					0		5	146
5:45 PM		24	11	15	82					6		5	143
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	252	53	139	683	0	0	0	0	23	0	58	1208
APPROACH %'s :	0.00%	82.62%	17.38%	16.91%	83.09%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	28.40%	0.00%	71.60%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	131	27	73	350	0	0	0	0	13	0	35	629
PEAK HR FACTOR :		0.963			0.904			0.000			0.800		0.947

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_4249_001

Day: FRIDAY

City: City of Jamul

Date: 9/16/2011

PM

NS/EW Streets:	State Route 94 (Campo Rd)			State Route 94 (Campo Rd)			Honey Springs Rd			Honey Springs Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	0	0	0	0	1	0	
4:00 PM		67	9	17	88					3		8	192
4:15 PM		48	3	13	81					3		10	158
4:30 PM		56	3	17	90					4		7	177
4:45 PM		36	7	16	100					4		2	165
5:00 PM		29	2	16	71					1		10	129
5:15 PM		32	6	14	115					3		6	176
5:30 PM		27	4	17	95					3		9	155
5:45 PM		35	3	14	105					3		4	164
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	330	37	124	745	0	0	0	0	24	0	56	1316
APPROACH %'s :	0.00%	89.92%	10.08%	14.27%	85.73%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	30.00%	0.00%	70.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	207	22	63	359	0	0	0	0	14	0	27	692
PEAK HR FACTOR :		0.753			0.909			0.000			0.788		0.901

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_4249_001

Day: SATURDAY

City: City of Jamul

Date: 9/17/2011

PM

NS/EW Streets:	State Route 94 (Campo Rd)			State Route 94 (Campo Rd)			Honey Springs Rd			Honey Springs Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	0	0	0	0	1	0	
4:00 PM		48	3	7	55					7		4	124
4:15 PM		41	3	11	68					3		13	139
4:30 PM		40	2	11	53					3		7	116
4:45 PM		35	9	10	49					2		13	118
5:00 PM		36	3	13	44					3		9	108
5:15 PM		34	4	6	61					1		6	112
5:30 PM		45	3	15	51					1		3	118
5:45 PM		37	8	13	64					3		4	129
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	316	35	86	445	0	0	0	0	23	0	59	964
APPROACH %'s :	0.00%	90.03%	9.97%	16.20%	83.80%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	28.05%	0.00%	71.95%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	164	17	39	225	0	0	0	0	15	0	37	497
PEAK HR FACTOR :		0.887			0.835			0.000			0.813		0.894

CONTROL : 1-Way Stop (WB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Steel Canyon Rd and Jamul Dr , City of Jamul

Date: 9/12/2012

Day: Wednesday

Project #: CA12_4319_001

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Steel Canyon Rd)

Lanes	0	2	1		
AM	0	280	309	735	AM
NOON	0	0	0	0	NOON
PM	0	293	384	341	PM

Eastbound Approach (Jamul Dr)

Lanes	AM	NOON	PM
	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	459	0	169
0	0	0	0
1	84	0	24
	406	0	420

Northbound Approach

AM	364	0	276	97
NOON	0	0	0	0
PM	317	0	172	36
Lanes		0	1	1

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	589	735	AM
	0	0	NOON
	677	341	PM

West Leg AM	NOON	PM		East Leg AM	NOON	PM
0	0	0		543	0	193
0	0	0		406	0	420

	South Leg	
AM	364	373
NOON	0	0
PM	317	208

Total Volume Per Leg

	North Leg
AM	1324
NOON	0
PM	1018

West Leg AM	NOON	PM		East Leg AM	NOON	PM
0	0	0		949	0	613

	South Leg
AM	737
NOON	0
PM	525

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Steel Canyon Rd and Jamul Dr , City of Jamul

Date: 9/14/2012

Day: Friday

Project #: CA12_4319_001

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Steel Canyon Rd)

	Lanes 0	2	1		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	341	291	319	PM

Eastbound Approach (Jamul Dr)

Lanes	AM	NOON	PM
	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	0	0	151
0	0	0	1
1	0	0	24
	0	0	315

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	365	0	168	24	PM
		0	1	1	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	0	0	632
	0	0	319
West Leg	0	0	1
	0	0	0
East Leg	0	0	176
	0	0	315
South Leg	0	0	365
	0	0	192

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	0	951
West Leg	0	0	1
East Leg	0	0	491
South Leg	0	0	557

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Steel Canyon Rd and Jamul Dr , City of Jamul

Date: 9/15/2012

Day: Saturday

Project #: CA12_4319_001

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (Steel Canyon Rd)

	Lanes 0	2	1		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	241	171	302	PM

Eastbound Approach (Jamul Dr)

Lanes	AM	NOON	PM
	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	0	0	152
0	0	0	0
1	0	0	17
	0	0	193

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	258	0	150	22	PM
		0	1	1	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	412	302	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	0	0	0	169
0	0	0	0	0	193

	South Leg	
AM	0	0
NOON	0	0
PM	258	172

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	714

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	0	0	0	362

	South Leg
AM	0
NOON	0
PM	430

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Steel Canyon Rd and Willow Glen Dr , City of Jamul

Date: 9/12/2012

Day: Wednesday

Project #: CA12_4319_002

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Steel Canyon Rd)

	Lanes 0	1	0	
AM	14	70	6	69
NOON	0	0	0	0
PM	11	40	2	30

Eastbound Approach (Willow Glen Dr)

	AM	NOON	PM
	787	0	515
1	7	0	6
1	220	0	318
1	343	0	539

Westbound Approach

	AM	NOON	PM	Lanes
	13	0	5	0
	217	0	261	2
	180	0	127	1
	382	0	417	

Northbound Approach

AM	593	556	49	156
NOON	0	0	0	0
PM	706	243	19	97
Lanes		1	1	0

CONTROL: Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		West Leg		East Leg		South Leg	
AM	90	69	787	570	410	382	593	761
NOON	0	0	0	0	0	0	0	0
PM	53	30	515	863	393	417	706	359

Total Volume Per Leg

	North Leg	West Leg	East Leg	South Leg
AM	159	1357	792	1354
NOON	0	0	0	0
PM	83	1378	810	1065

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Steel Canyon Rd and Willow Glen Dr , City of Jamul

Date: 9/14/2012

Day: Friday

Project #: CA12_4319_002

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach

Steel Canyon Rd

Lanes	0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	16	25	8	36	PM

Eastbound Approach

Willow Glen Dr

Lanes	AM	NOON	PM
	0	0	608
1	0	0	11
1	0	0	396
1	0	0	488

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	5
2	0	0	331
1	0	0	129
	0	0	480

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	642	261	20	76	PM
		1	1	0	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	0	0	0
	0	0	0
	49	36	49
East Leg	0	0	465
	0	0	480
West Leg	0	0	608
	0	0	895
South Leg	0	0	0
	0	0	0
	642	357	642

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	0	0
	0	0	0
	85	85	85
East Leg	0	0	945
West Leg	0	0	1503
South Leg	0	0	0
	0	0	0
	999	999	999

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Steel Canyon Rd and Willow Glen Dr , City of Jamul

Date: 9/15/2012

Day: Saturday

Project #: CA12_4319_002

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Steel Canyon Rd)

	Lanes 0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	10	7	3	16	PM

Eastbound Approach (Willow Glen Dr)

Lanes	AM	NOON	PM
	0	0	579
1	0	0	6
1	0	0	334
1	0	0	348

Westbound Approach

AM	NOON	PM	Lanes
0	0	5	0
0	0	322	2
0	0	66	1
0	0	421	

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	421	247	5	84	PM
		1	1	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg		
0	0	AM
0	0	NOON
20	16	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	579	0	0	393
0	0	688	0	0	421
			AM	NOON	PM

South Leg		
0	0	AM
0	0	NOON
421	336	PM

Total Volume Per Leg

North Leg	
0	AM
0	NOON
36	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	1267	0	0	814
			AM	NOON	PM

South Leg	
0	AM
0	NOON
757	PM

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Willow Glen Dr and Jamacha Rd , City of Jamul

Date: 9/12/2012

Day: Wednesday

Project #: CA12_4319_003

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Willow Glen Dr)

Lanes	1	1	2		
AM	44	56	36	184	AM
NOON	0	0	0	0	NOON
PM	66	127	114	246	PM

Eastbound Approach (Jamacha Rd)

Lanes	AM	NOON	PM
	1245	0	1192
2	40	0	118
3	515	0	815
1	320	0	504

Westbound Approach

Lanes	AM	NOON	PM
1	35	0	66
3	690	0	672
2	158	0	178
	745	0	1023

Northbound Approach

	AM	NOON	PM
	534	0	809
Lanes 2	511	0	454
Lanes 1	109	0	62
Lanes 1	194	0	94

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	136	184	AM
	0	0	NOON
	307	246	PM

West Leg	AM	NOON	PM
	1245	0	1192
	875	0	1437

East Leg	AM	NOON	PM
	883	0	916
	745	0	1023

South Leg		
AM	534	814
NOON	0	0
PM	809	610

Total Volume Per Leg

North Leg	
320	AM
0	NOON
553	PM

West Leg	AM	NOON	PM
	2120	0	2629

East Leg	AM	NOON	PM
	1628	0	1939

South Leg	
AM	1348
NOON	0
PM	1419

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Willow Glen Dr and Jamacha Rd , City of Jamul

Date: 9/14/2012

Day: Friday

Project #: CA12_4319_003

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Willow Glen Dr)

Lanes	1	1	2		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	63	124	145	310	PM

Eastbound Approach (Jamacha Rd)

Lanes	AM	NOON	PM
	0	0	1239
2	0	0	145
3	0	0	706
1	0	0	591

Westbound Approach

Lanes	AM	NOON	PM
1	0	0	82
3	0	0	683
2	0	0	187
	0	0	972

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	902	493	83	121	PM
		2	1	1	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		East Leg			West Leg			South Leg	
	0	0	0	0	952	0	0	1239	0	0
	0	0	0	0	972	0	0	1442	0	0
	332	310							902	697
	AM	NOON	AM	NOON	PM	AM	NOON	PM	AM	NOON
										PM

Total Volume Per Leg

	North Leg	East Leg			West Leg			South Leg
	0	0	0	1924	0	0	2681	0
	0							0
	642							1599
	AM	NOON	PM	AM	NOON	PM	AM	NOON
								PM

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Willow Glen Dr and Jamacha Rd , City of Jamul

Date: 9/15/2012

Day: Saturday

Project #: CA12_4319_003

Peak Hour Summary

Southbound Approach (Willow Glen Dr)

Lanes	1	1	2		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	72	118	121	257	PM

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	400 PM

Eastbound Approach (Jamacha Rd)

Lanes	AM	NOON	PM
	0	0	1110
2	0	0	117
3	0	0	577
1	0	0	414

Westbound Approach

AM	NOON	PM	Lanes
0	0	66	1
0	0	557	3
0	0	143	2
0	0	805	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	675	481	74	107	PM
		2	1	1	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	311	257	PM

West Leg	AM	NOON	PM
	0	0	1110
	0	0	1108

East Leg	AM	NOON	PM
	0	0	766
	0	0	805

South Leg		
AM	0	0
NOON	0	0
PM	675	662

Total Volume Per Leg

North Leg	
0	AM
0	NOON
568	PM

West Leg	AM	NOON	PM
	0	0	2218

East Leg	AM	NOON	PM
	0	0	1571

South Leg	
AM	0
NOON	0
PM	1337

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Sweetwater Springs Blvd and Jamacha Blvd , City of Jamul

Date: 9/12/2012

Day: Wednesday

Project #: CA12_4319_004

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Sweetwater Springs Blvd)

	Lanes 1	0.5	0.5		
AM	405	45	107	906	AM
NOON	0	0	0	0	NOON
PM	502	12	140	520	PM

Eastbound Approach (Jamacha Blvd)

Lanes	AM	NOON	PM
	724	0	931
2	757	0	345
2	508	0	560
0	28	0	7

Westbound Approach

AM	NOON	PM	Lanes
138	0	114	1
297	0	393	1
15	0	9	1
628	0	716	

Northbound Approach

AM	88	22	11	13	AM
NOON	0	0	0	0	NOON
PM	28	36	61	16	PM
		1	0	1	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg		
557	906	AM
0	0	NOON
654	520	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
724	0	931	450	0	516
1293	0	912	628	0	716

South Leg		
88	46	AM
0	0	NOON
28	113	PM

Total Volume Per Leg

North Leg	
1463	AM
0	NOON
1174	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
2017	0	1843	1078	0	1232

South Leg	
134	AM
0	NOON
141	PM

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Sweetwater Springs Blvd and Jamacha Blvd , City of Jamul

Date: 9/14/2012

Day: Friday

Project #: CA12_4319_004

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach

Sweetwater Springs Blvd

Lanes	1	0.5	0.5		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	464	12	158	500	PM

Eastbound Approach

Jamacha Blvd

Lanes	AM	NOON	PM
	0	0	964
2	0	0	341
2	0	0	541
0	0	0	7

Westbound Approach

Lanes	AM	NOON	PM
1	0	0	120
1	0	0	480
1	0	0	3
	0	0	717

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	22	20	39	18	PM
Lanes		1	0	1	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg		
0	0	AM
0	0	NOON
634	500	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	964	0	0	603
0	0	889	0	0	717
			AM	NOON	PM

South Leg		
0	0	AM
0	0	NOON
22	77	PM

Total Volume Per Leg

North Leg	
0	AM
0	NOON
1134	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	1853	0	0	1320
			AM	NOON	PM

South Leg	
0	AM
0	NOON
99	PM

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Sweetwater Springs Blvd and Jamacha Blvd , City of Jamul

Date: 9/15/2012

Day: Saturday

Project #: CA12_4319_004

Peak Hour Summary

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	445 PM

Southbound Approach

Sweetwater Springs Blvd

Lanes	1	0.5	0.5		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	256	2	112	388	PM

Eastbound Approach

Jamacha Blvd

Lanes	AM	NOON	PM
	0	0	637
2	0	0	269
2	0	0	401
0	0	0	2

Westbound Approach

AM	NOON	PM	Lanes
0	0	114	1
0	0	378	1
0	0	1	1
0	0	514	

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	5	3	5	1	PM
		1	0	1	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg		
0	0	AM
0	0	NOON
370	388	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	637	0	0	493
0	0	672	0	0	514
			AM	NOON	PM

South Leg		
0	0	AM
0	0	NOON
5	9	PM

Total Volume Per Leg

North Leg
0 AM
0 NOON
758 PM

West Leg			East Leg		
AM	NOON	PM			
0	0	1309	0	0	1007
			AM	NOON	PM

South Leg
0 AM
0 NOON
14 PM

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Jamul Dr and Lyons Valley Rd , City of Jamul

Date: 9/12/2012

Day: Wednesday

Project #: CA12_4319_005

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Jamul Dr)

Lanes	0	1	0		
AM	17	1	40	105	AM
NOON	0	0	0	0	NOON
PM	16	0	109	62	PM

Eastbound Approach (Lyons Valley Rd)

Lanes	AM	NOON	PM
	462	0	196
1	13	0	12
1	252	0	369
0	3	0	2

Westbound Approach

AM	NOON	PM	Lanes
91	0	50	1
440	0	179	1
2	0	1	0
292	0	478	

Northbound Approach

AM	6	5	1	0	AM
NOON	0	0	0	0	NOON
PM	3	1	0	0	PM
Lanes		0	1	0	Lanes

CONTROL

1-Way Stop (SB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	58	105	AM
	0	0	NOON
	125	62	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
462	0	196	533	0	230
268	0	383	292	0	478

	South Leg	
AM	6	6
NOON	0	0
PM	3	1

Total Volume Per Leg

	North Leg
AM	163
NOON	0
PM	187

West Leg AM	NOON	PM	East Leg AM	NOON	PM
730	0	579	825	0	708

	South Leg
AM	12
NOON	0
PM	4

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Jamul Dr and Lyons Valley Rd , City of Jamul

Date: 9/14/2012

Day: Friday

Project #: CA12_4319_005

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Jamul Dr)

	Lanes 0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	10	5	94	57	PM

Eastbound Approach (Lyons Valley Rd)

	AM	NOON	PM
	0	0	208
1	0	0	12
1	0	0	326
0	0	0	2
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
0	0	45	1
0	0	197	1
0	0	4	0
0	0	422	
AM	NOON	PM	

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	11	1	0	2	PM
		0	1	0	Lanes

CONTROL

1-Way Stop (SB)

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	0	0	109
	0	0	57
West Leg	0	0	208
	0	0	340
South Leg	0	0	11
	0	0	3
East Leg	0	0	246
	0	0	422

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	0	166
West Leg	0	0	548
South Leg	0	0	14
East Leg	0	0	668

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Jamul Dr and Lyons Valley Rd , City of Jamul

Date: 9/15/2012

Day: Saturday

Project #: CA12_4319_005

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (Jamul Dr)

	Lanes 0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	31	3	58	49	PM

Eastbound Approach (Lyons Valley Rd)

Lanes	AM	NOON	PM
	0	0	204
1	0	0	9
1	0	0	183
0	0	0	13

Westbound Approach

AM	NOON	PM	Lanes
0	0	39	1
0	0	172	1
0	0	4	0
0	0	243	

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	20	1	1	2	PM
		0	1	0	Lanes

CONTROL

1-Way Stop (SB)

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	0	0	92
	0	0	49
West Leg	0	0	204
	0	0	205
East Leg	0	0	215
	0	0	243
South Leg	0	0	20
	0	0	4

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	0	141
West Leg	0	0	409
East Leg	0	0	458
South Leg	0	0	24

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Jefferson Rd and Lyons Valley Rd , City of Jamul

Date: 9/12/2012

Day: Wednesday

Project #: CA12_4319_006

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Jefferson Rd)

	Lanes 0	1	0		
AM	1	0	0	4	AM
NOON	0	0	0	0	NOON
PM	6	4	1	5	PM

Eastbound Approach (Lyons Valley Rd)

Lanes	AM	NOON	PM
	332	0	148
0	3	0	2
1	102	0	291
0	7	0	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	2	0
322	0	141	1
166	0	59	1
275	0	401	

Northbound Approach

AM	173	9	1	173	AM
NOON	0	0	0	0	NOON
PM	63	1	1	109	PM
		0	2	0	Lanes

CONTROL: 1-Way Stop (NB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	1	4	AM
	0	0	NOON
	11	5	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
332	0	148	488	0	202
112	0	293	275	0	401

	South Leg	
AM	173	183
NOON	0	0
PM	63	111

Total Volume Per Leg

	North Leg
AM	5
NOON	0
PM	16

West Leg AM	NOON	PM	East Leg AM	NOON	PM
444	0	441	763	0	603

	South Leg
AM	356
NOON	0
PM	174

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Jefferson Rd and Lyons Valley Rd , City of Jamul

Date: 9/14/2012

Day: Friday

Project #: CA12_4319_006

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Jefferson Rd)

	Lanes 0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	3	4	4	2	PM

Eastbound Approach (Lyons Valley Rd)

Lanes	AM	NOON	PM
	0	0	192
0	0	0	1
1	0	0	261
0	0	0	1

Westbound Approach

AM	NOON	PM	Lanes
0	0	1	0
0	0	187	1
0	0	61	1
0	0	341	

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	66	2	0	76	PM
		0	2	0	Lanes

CONTROL

1-Way Stop (NB)

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	0	0	11
	0	0	2
West Leg	0	0	192
	0	0	263
East Leg	0	0	249
	0	0	341
South Leg	0	0	66
	0	0	78

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	0	13
West Leg	0	0	455
East Leg	0	0	590
South Leg	0	0	144

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Jefferson Rd and Lyons Valley Rd , City of Jamul

Date: 9/15/2012

Day: Saturday

Project #: CA12_4319_006

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (Jefferson Rd)

	Lanes 0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	2	2	1	3	PM

Eastbound Approach (Lyons Valley Rd)

Lanes	AM	NOON	PM
	0	0	174
0	0	0	2
1	0	0	158
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	169	1
0	0	48	1
0	0	214	

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	50	3	1	55	PM
		0	2	0	Lanes

CONTROL

1-Way Stop (NB)

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	0	0	5
	0	0	3
West Leg	0	0	174
	0	0	160
East Leg	0	0	217
	0	0	214
South Leg	0	0	50
	0	0	59

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	0	8
West Leg	0	0	334
East Leg	0	0	431
South Leg	0	0	109

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Campo Rd (SR 94) and Maxfield Rd , City of Jamul

Date: 9/12/2012

Day: Wednesday

Project #: CA12_4319_007

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Campo Rd (SR 94)

Southbound Approach

Lanes	0	1	0		
AM	10	180	0	465	AM
NOON	0	0	0	0	NOON
PM	52	458	0	232	PM

Maxfield Rd

Eastbound Approach

Lanes	AM	NOON	PM
	16	0	64
0	6	0	33
1	0	0	0
0	4	0	31

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	

CONTROL

1-Way Stop (EB)

Northbound Approach

AM	184	6	459	0	AM
NOON	0	0	0	0	NOON
PM	489	12	199	0	PM
		1	1	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg	
AM	190	465
NOON	0	0
PM	510	232

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
16	0	64	0	0	0
10	0	64	0	0	0

	South Leg	
AM	184	465
NOON	0	0
PM	489	211

Total Volume Per Leg

	North Leg
AM	655
NOON	0
PM	742

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
26	0	128	0	0	0

	South Leg
AM	649
NOON	0
PM	700

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Campo Rd (SR 94) and Maxfield Rd , City of Jamul

Date: 9/14/2012

Day: Friday

Project #: CA12_4319_007

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Campo Rd (SR 94)

Southbound Approach

	Lanes 0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	28	501	0	223	PM

Maxfield Rd

Eastbound Approach

	AM	NOON	PM
	0	0	32
0	0	0	19
1	0	0	0
0	0	0	27
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	
AM	NOON	PM	

CONTROL

1-Way Stop (EB)

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	528	4	204	0	PM
		1	1	0	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	529	223	PM

West Leg	AM	NOON	PM
	0	0	32
	0	0	46

East Leg	AM	NOON	PM
	0	0	0
	0	0	0

	South Leg	
AM	0	0
NOON	0	0
PM	528	208

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	752

West Leg	AM	NOON	PM
	0	0	78

East Leg	AM	NOON	PM
	0	0	0

	South Leg
AM	0
NOON	0
PM	736

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Campo Rd (SR 94) and Maxfield Rd , City of Jamul

Date: 9/15/2012

Day: Saturday

Project #: CA12_4319_007

AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Campo Rd (SR 94))

	Lanes 0	1	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	13	350	0	171	PM

Eastbound Approach (Maxfield Rd)

Lanes	AM	NOON	PM
	0	0	19
0	0	0	9
1	0	0	0
0	0	0	14

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	

CONTROL

1-Way Stop (EB)

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	364	6	162	0	PM
		1	1	0	Lanes

Count Periods	Start	End
AM		
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	363	171	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	19	0	0	0
0	0	23	0	0	0

	South Leg	
AM	0	0
NOON	0	0
PM	364	168

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	534

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	42	0	0	0

	South Leg
AM	0
NOON	0
PM	532

Prepared by NDS/ATD

VOLUME

Steel Canyon Rd between Jamul Dr & Willow Glen Dr

Day: Wednesday
Date: 9/12/2012

City: Jamul
Project #: CA12_4320_001

DAILY TOTALS	NB	SB	EB	WB	Total
	6,888	7,140	0	0	14,028

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	11		13						24		12:00	95		91						186	
00:15	6		11						17		12:15	97		83						180	
00:30	6		9						15		12:30	90		88						178	
00:45	1	24	8	41					9	65	12:45	110	392	109	371					219	763
01:00	3		6						9		13:00	95		92						187	
01:15	2		9						11		13:15	86		103						189	
01:30	0		5						5		13:30	83		101						184	
01:45	5	10	5	25					10	35	13:45	110	374	86	382					196	756
02:00	2		8						10		14:00	122		94						216	
02:15	1		4						5		14:15	163		126						289	
02:30	3		3						6		14:30	92		100						192	
02:45	3	9	2	17					5	26	14:45	109	486	113	433					222	919
03:00	3		1						4		15:00	138		123						261	
03:15	7		5						12		15:15	118		137						255	
03:30	5		6						11		15:30	112		143						255	
03:45	4	19	1	13					5	32	15:45	83	451	144	547					227	998
04:00	6		2						8		16:00	92		165						257	
04:15	5		2						7		16:15	83		122						205	
04:30	11		5						16		16:30	86		138						224	
04:45	18	40	8	17					26	57	16:45	89	350	154	579					243	929
05:00	21		10						31		17:00	86		162						248	
05:15	19		11						30		17:15	104		147						251	
05:30	38		7						45		17:30	82		168						250	
05:45	56	134	16	44					72	178	17:45	91	363	224	701					315	1064
06:00	68		18						86		18:00	110		171						281	
06:15	89		34						123		18:15	84		144						228	
06:30	106		84						190		18:30	78		141						219	
06:45	161	424	192	328					353	752	18:45	139	411	139	595					278	1006
07:00	198		131						329		19:00	103		135						238	
07:15	203		128						331		19:15	85		105						190	
07:30	214		149						363		19:30	78		84						162	
07:45	229	844	178	586					407	1430	19:45	82	348	88	412					170	760
08:00	202		97						299		20:00	113		57						170	
08:15	141		78						219		20:15	72		93						165	
08:30	155		98						253		20:30	56		93						149	
08:45	121	619	95	368					216	987	20:45	36	277	62	305					98	582
09:00	97		71						168		21:00	31		61						92	
09:15	99		69						168		21:15	28		60						88	
09:30	88		47						135		21:30	31		53						84	
09:45	77	361	58	245					135	606	21:45	30	120	57	231					87	351
10:00	83		67						150		22:00	25		51						76	
10:15	88		58						146		22:15	26		47						73	
10:30	83		86						169		22:30	14		32						46	
10:45	78	332	80	291					158	623	22:45	25	90	29	159					54	249
11:00	75		90						165		23:00	14		24						38	
11:15	86		106						192		23:15	14		23						37	
11:30	95		79						174		23:30	11		17						28	
11:45	106	362	85	360					191	722	23:45	9	48	26	90					35	138
TOTALS		3178		2335						5513	TOTALS		3710		4805						8515
SPLIT %		57.6%		42.4%						39.3%	SPLIT %		43.6%		56.4%						60.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	6,888	7,140	0	0	14,028

AM Peak Hour	07:15	06:45			07:00	PM Peak Hour	14:15	17:15			17:15
AM Pk Volume	848	600			1430	PM Pk Volume	502	710			1097
Pk Hr Factor	0.926	0.781			0.878	Pk Hr Factor	0.770	0.792			0.871
7 - 9 Volume	1463	954	0	0	2417	4 - 6 Volume	713	1280	0	0	1993
7 - 9 Peak Hour	07:15	07:00			07:00	4 - 6 Peak Hour	16:30	17:00			17:00
7 - 9 Pk Volume	848	586	0	0	1430	4 - 6 Pk Volume	365	701	0	0	1064
Pk Hr Factor	0.926	0.823	0.000	0.000	0.878	Pk Hr Factor	0.877	0.782	0.000	0.000	0.844

Prepared by NDS/ATD

VOLUME

Willow Glen Dr between Jamacha Rd & Steele Canyon Rd

Day: Tuesday
Date: 9/25/2012

City: Jamul
Project #: CA12_4320_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	9,465	10,521	19,986

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			25		37		62		12:00			119		174		293	
00:15			17		69		86		12:15			127		157		284	
00:30			21		38		59		12:30			147		151		298	
00:45			19	82	65	209	84	291	12:45			126	519	157	639	283	1158
01:00			16		35		51		13:00			171		166		337	
01:15			17		33		50		13:15			165		132		297	
01:30			9		35		44		13:30			189		129		318	
01:45			7	49	31	134	38	183	13:45			161	686	164	591	325	1277
02:00			12		34		46		14:00			156		190		346	
02:15			11		28		39		14:15			153		171		324	
02:30			15		29		44		14:30			165		148		313	
02:45			8	46	26	117	34	163	14:45			165	639	123	632	288	1271
03:00			5		24		29		15:00			173		174		347	
03:15			8		44		52		15:15			159		164		323	
03:30			4		22		26		15:30			194		160		354	
03:45			4	21	32	122	36	143	15:45			208	734	115	613	323	1347
04:00			4		28		32		16:00			200		144		344	
04:15			12		33		45		16:15			192		183		375	
04:30			9		41		50		16:30			207		143		350	
04:45			20	45	33	135	53	180	16:45			185	784	131	601	316	1385
05:00			19		41		60		17:00			191		131		322	
05:15			14		44		58		17:15			192		145		337	
05:30			27		56		83		17:30			197		128		325	
05:45			32	92	88	229	120	321	17:45			211	791	115	519	326	1310
06:00			46		76		122		18:00			190		120		310	
06:15			52		130		182		18:15			178		124		302	
06:30			80		163		243		18:30			144		123		267	
06:45			138	316	200	569	338	885	18:45			167	679	120	487	287	1166
07:00			145		259		404		19:00			149		88		237	
07:15			114		267		381		19:15			129		84		213	
07:30			152		226		378		19:30			116		81		197	
07:45			163	574	249	1001	412	1575	19:45			96	490	80	333	176	823
08:00			166		268		434		20:00			109		93		202	
08:15			104		203		307		20:15			91		92		183	
08:30			115		210		325		20:30			83		54		137	
08:45			160	545	208	889	368	1434	20:45			73	356	52	291	125	647
09:00			110		176		286		21:00			90		62		152	
09:15			120		133		253		21:15			75		52		127	
09:30			122		112		234		21:30			66		68		134	
09:45			98	450	146	567	244	1017	21:45			68	299	39	221	107	520
10:00			105		120		225		22:00			63		62		125	
10:15			96		145		241		22:15			56		81		137	
10:30			105		160		265		22:30			54		76		130	
10:45			102	408	144	569	246	977	22:45			41	214	65	284	106	498
11:00			106		125		231		23:00			48		54		102	
11:15			151		154		305		23:15			46		55		101	
11:30			107		127		234		23:30			29		40		69	
11:45			134	498	161	567	295	1065	23:45			25	148	53	202	78	350
TOTALS				3126		5108		8234	TOTALS				6339		5413		11752
SPLIT %				38.0%		62.0%		41.2%	SPLIT %				53.9%		46.1%		58.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	9,465	10,521	19,986

AM Peak Hour			07:15	07:15	07:15	PM Peak Hour			15:45	13:45	15:30
AM Pk Volume			595	1010	1605	PM Pk Volume			807	673	1396
Pk Hr Factor			0.896	0.942	0.925	Pk Hr Factor			0.970	0.886	0.931
7 - 9 Volume	0	0	1119	1890	3009	4 - 6 Volume	0	0	1575	1120	2695
7 - 9 Peak Hour			07:15	07:15	07:15	4 - 6 Peak Hour			17:00	16:00	16:00
7 - 9 Pk Volume	0	0	595	1010	1605	4 - 6 Pk Volume	0	0	791	601	1385
Pk Hr Factor	0.000	0.000	0.896	0.942	0.925	Pk Hr Factor	0.000	0.000	0.937	0.821	0.923

Prepared by NDS/ATD

VOLUME

Willow Glen Dr E/o Steel Canyon Rd

Day: Wednesday
Date: 9/12/2012

City: Jamul
Project #: CA12_4320_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,109	6,128	12,237

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			29		19		48		12:00			84		71		155	
00:15			39		15		54		12:15			73		79		152	
00:30			31		14		45		12:30			99		76		175	
00:45			40	139	9	57	49	196	12:45			74	330	92	318	166	648
01:00			17		10		27		13:00			76		89		165	
01:15			29		12		41		13:15			86		93		179	
01:30			20		4		24		13:30			83		94		177	
01:45			29	95	4	30	33	125	13:45			83	328	95	371	178	699
02:00			13		14		27		14:00			99		108		207	
02:15			23		11		34		14:15			79		140		219	
02:30			23		12		35		14:30			85		86		171	
02:45			22	81	2	39	24	120	14:45			84	347	118	452	202	799
03:00			9		8		17		15:00			99		144		243	
03:15			23		5		28		15:15			122		111		233	
03:30			16		6		22		15:30			103		113		216	
03:45			13	61	3	22	16	83	15:45			90	414	108	476	198	890
04:00			13		5		18		16:00			105		109		214	
04:15			20		6		26		16:15			115		114		229	
04:30			26		4		30		16:30			116		99		215	
04:45			15	74	11	26	26	100	16:45			112	448	104	426	216	874
05:00			17		16		33		17:00			108		115		223	
05:15			27		12		39		17:15			106		130		236	
05:30			23		11		34		17:30			104		107		211	
05:45			25	92	33	72	58	164	17:45			94	412	101	453	195	865
06:00			29		34		63		18:00			80		121		201	
06:15			48		33		81		18:15			86		110		196	
06:30			78		41		119		18:30			77		115		192	
06:45			125	280	48	156	173	436	18:45			79	322	92	438	171	760
07:00			100		95		195		19:00			83		104		187	
07:15			103		88		191		19:15			60		102		162	
07:30			71		89		160		19:30			81		103		184	
07:45			83	357	101	373	184	730	19:45			86	310	84	393	170	703
08:00			84		99		183		20:00			50		82		132	
08:15			83		84		167		20:15			51		68		119	
08:30			81		77		158		20:30			54		72		126	
08:45			101	349	107	367	208	716	20:45			57	212	53	275	110	487
09:00			74		65		139		21:00			53		52		105	
09:15			78		86		164		21:15			69		51		120	
09:30			54		83		137		21:30			51		56		107	
09:45			69	275	88	322	157	597	21:45			56	229	47	206	103	435
10:00			60		85		145		22:00			81		36		117	
10:15			62		80		142		22:15			81		50		131	
10:30			46		74		120		22:30			50		42		92	
10:45			63	231	75	314	138	545	22:45			70	282	33	161	103	443
11:00			61		98		159		23:00			40		29		69	
11:15			63		73		136		23:15			53		33		86	
11:30			77		69		146		23:30			39		16		55	
11:45			61	262	56	296	117	558	23:45			47	179	7	85	54	264
TOTALS				2296		2074		4370	TOTALS				3813		4054		7867
SPLIT %				52.5%		47.5%		35.7%	SPLIT %				48.5%		51.5%		64.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,109	6,128	12,237

AM Peak Hour			06:30	07:15	07:00	PM Peak Hour			16:15	14:15	14:45
AM Pk Volume			406	377	730	PM Pk Volume			451	488	894
Pk Hr Factor			0.812	0.933	0.936	Pk Hr Factor			0.972	0.847	0.920
7 - 9 Volume	0	0	706	740	1446	4 - 6 Volume	0	0	860	879	1739
7 - 9 Peak Hour			07:00	07:15	07:00	4 - 6 Peak Hour			16:15	16:45	16:30
7 - 9 Pk Volume	0	0	357	377	730	4 - 6 Pk Volume	0	0	451	456	890
Pk Hr Factor	0.000	0.000	0.867	0.933	0.936	Pk Hr Factor	0.000	0.000	0.972	0.877	0.943

Prepared by NDS/ATD

VOLUME

Jamul Dr between Steele Canyon Rd & Lyons Valley Rd

Day: Wednesday
Date: 9/12/2012

City: Jamul
Project #: CA12_4320_004

DAILY TOTALS	NB	SB	EB	WB	Total
	1,226	1,207	0	0	2,433

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	4		1						5		12:00	9		18						27	
00:15	0		2						2		12:15	13		13						26	
00:30	0		0						0		12:30	21		13						34	
00:45	1	5	0	3					1	8	12:45	14	57	18	62					32	119
01:00	1		0						1		13:00	26		14						40	
01:15	0		0						0		13:15	22		17						39	
01:30	1		0						1		13:30	12		12						24	
01:45	3	5	0						3	5	13:45	17	77	10	53					27	130
02:00	2		1						3		14:00	35		13						48	
02:15	0		0						0		14:15	28		24						52	
02:30	3		0						3		14:30	22		13						35	
02:45	0	5	1	2					1	7	14:45	28	113	17	67					45	180
03:00	0		0						0		15:00	21		20						41	
03:15	1		0						1		15:15	28		28						56	
03:30	1		2						3		15:30	25		19						44	
03:45	2	4	0	2					2	6	15:45	34	108	20	87					54	195
04:00	0		0						0		16:00	24		14						38	
04:15	1		0						1		16:15	30		17						47	
04:30	0		3						3		16:30	35		23						58	
04:45	1	2	3	6					4	8	16:45	34	123	11	65					45	188
05:00	0		3						3		17:00	33		21						54	
05:15	2		4						6		17:15	31		21						52	
05:30	0		6						6		17:30	31		20						51	
05:45	1	3	4	17					5	20	17:45	24	119	9	71					33	190
06:00	0		10						10		18:00	32		13						45	
06:15	6		11						17		18:15	25		22						47	
06:30	4		19						23		18:30	22		21						43	
06:45	11	21	45	85					56	106	18:45	25	104	13	69					38	173
07:00	20		58						78		19:00	17		13						30	
07:15	14		68						82		19:15	13		17						30	
07:30	12		37						49		19:30	25		8						33	
07:45	4	50	35	198					39	248	19:45	23	78	7	45					30	123
08:00	13		30						43		20:00	22		8						30	
08:15	11		22						33		20:15	13		12						25	
08:30	7		37						44		20:30	21		7						28	
08:45	21	52	29	118					50	170	20:45	10	66	3	30					13	96
09:00	10		28						38		21:00	19		12						31	
09:15	8		11						19		21:15	13		3						16	
09:30	8		14						22		21:30	11		4						15	
09:45	8	34	17	70					25	104	21:45	17	60	2	21					19	81
10:00	19		11						30		22:00	4		2						6	
10:15	15		25						40		22:15	4		3						7	
10:30	10		20						30		22:30	6		0						6	
10:45	11	55	13	69					24	124	22:45	3	17	8	13					11	30
11:00	13		10						23		23:00	1		2						3	
11:15	13		6						19		23:15	4		0						4	
11:30	15		20						35		23:30	4		1						5	
11:45	12	53	14	50					26	103	23:45	6	15	1	4					7	19
TOTALS	289		620							909	TOTALS	937		587							1524
SPLIT %	31.8%		68.2%							37.4%	SPLIT %	61.5%		38.5%							62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,226	1,207	0	0	2,433

AM Peak Hour	06:45	06:45			06:45	PM Peak Hour	16:30	15:00			16:30
AM Pk Volume	57	208			265	PM Pk Volume	133	87			209
Pk Hr Factor	0.713	0.765			0.808	Pk Hr Factor	0.950	0.777			0.901
7 - 9 Volume	102	316	0	0	418	4 - 6 Volume	242	136	0	0	378
7 - 9 Peak Hour	08:00	07:00			07:00	4 - 6 Peak Hour	16:30	16:30			16:30
7 - 9 Pk Volume	52	198	0	0	248	4 - 6 Pk Volume	133	76	0	0	209
Pk Hr Factor	0.619	0.728	0.000	0.000	0.756	Pk Hr Factor	0.950	0.826	0.000	0.000	0.901

Prepared by NDS/ATD

VOLUME

Sweetwater Springs Blvd just N/o Jamacha Blvd

Day: Wednesday
Date: 9/12/2012

City: Jamul
Project #: CA12_4320_005

DAILY TOTALS	NB	SB	EB	WB	Total
	7,490	7,993	0	0	15,483

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	8		15						23		12:00	88		109						197	
00:15	7		16						23		12:15	98		107						205	
00:30	8		10						18		12:30	75		87						162	
00:45	7	30	14	55					21	85	12:45	86	347	96	399					182	746
01:00	8		5						13		13:00	83		81						164	
01:15	7		7						14		13:15	100		126						226	
01:30	9		10						19		13:30	134		99						233	
01:45	5	29	7	29					12	58	13:45	130	447	102	408					232	855
02:00	5		9						14		14:00	158		142						300	
02:15	12		7						19		14:15	150		217						367	
02:30	7		11						18		14:30	128		193						321	
02:45	10	34	10	37					20	71	14:45	141	577	127	679					268	1256
03:00	9		8						17		15:00	170		223						393	
03:15	13		6						19		15:15	130		193						323	
03:30	5		6						11		15:30	112		140						252	
03:45	6	33	14	34					20	67	15:45	115	527	189	745					304	1272
04:00	11		4						15		16:00	117		151						268	
04:15	11		6						17		16:15	100		165						265	
04:30	16		6						22		16:30	120		174						294	
04:45	15	53	5	21					20	74	16:45	131	468	167	657					298	1125
05:00	27		12						39		17:00	140		155						295	
05:15	37		20						57		17:15	129		185						314	
05:30	66		29						95		17:30	124		182						306	
05:45	60	190	33	94					93	284	17:45	116	509	168	690					284	1199
06:00	69		24						93		18:00	107		159						266	
06:15	105		58						163		18:15	112		140						252	
06:30	137		75						212		18:30	98		129						227	
06:45	248	559	124	281					372	840	18:45	109	426	132	560					241	986
07:00	205		176						381		19:00	87		118						205	
07:15	163		106						269		19:15	87		137						224	
07:30	246		103						349		19:30	83		123						206	
07:45	270	884	183	568					453	1452	19:45	66	323	98	476					164	799
08:00	130		200						330		20:00	61		100						161	
08:15	121		96						217		20:15	58		91						149	
08:30	112		82						194		20:30	51		71						122	
08:45	123	486	77	455					200	941	20:45	49	219	68	330					117	549
09:00	85		73						158		21:00	48		66						114	
09:15	79		75						154		21:15	49		69						118	
09:30	90		53						143		21:30	34		59						93	
09:45	92	346	69	270					161	616	21:45	26	157	63	257					89	414
10:00	89		72						161		22:00	29		59						88	
10:15	71		82						153		22:15	22		60						82	
10:30	81		65						146		22:30	25		39						64	
10:45	95	336	75	294					170	630	22:45	29	105	36	194					65	299
11:00	82		78						160		23:00	25		33						58	
11:15	66		92						158		23:15	23		31						54	
11:30	93		86						179		23:30	8		23						31	
11:45	91	332	68	324					159	656	23:45	17	73	49	136					66	209
TOTALS		3312		2462						5774	TOTALS		4178		5531						9709
SPLIT %		57.4%		42.6%						37.3%	SPLIT %		43.0%		57.0%						62.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	7,490	7,993	0	0	15,483

AM Peak Hour	07:00	07:15			07:00	PM Peak Hour	14:15	14:15			14:15
AM Pk Volume	884	592			1452	PM Pk Volume	589	760			1349
Pk Hr Factor	0.819	0.740			0.801	Pk Hr Factor	0.866	0.852			0.858
7 - 9 Volume	1370	1023	0	0	2393	4 - 6 Volume	977	1347	0	0	2324
7 - 9 Peak Hour	07:00	07:15			07:00	4 - 6 Peak Hour	16:45	17:00			16:45
7 - 9 Pk Volume	884	592	0	0	1452	4 - 6 Pk Volume	524	690	0	0	1213
Pk Hr Factor	0.819	0.740	0.000	0.000	0.801	Pk Hr Factor	0.936	0.932	0.000	0.000	0.966

Prepared by NDS/ATD

VOLUME

Lyons Valley Rd E/o Jamul Dr

Day: Wednesday
Date: 9/12/2012

City: Jamul
Project #: CA12_4320_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,221	4,272	8,493

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			18		2		20		12:00			36		54		90	
00:15			4		3		7		12:15			38		49		87	
00:30			3		0		3		12:30			63		49		112	
00:45			8	33	2	7	10	40	12:45			51	188	58	210	109	398
01:00			4		3		7		13:00			79		51		130	
01:15			3		1		4		13:15			54		38		92	
01:30			2		0		2		13:30			52		42		94	
01:45			3	12	1	5	4	17	13:45			65	250	44	175	109	425
02:00			5		3		8		14:00			58		62		120	
02:15			3		2		5		14:15			74		70		144	
02:30			2		1		3		14:30			94		65		159	
02:45			4	14	1	7	5	21	14:45			148	374	99	296	247	670
03:00			3		3		6		15:00			103		120		223	
03:15			3		5		8		15:15			74		88		162	
03:30			3		6		9		15:30			87		62		149	
03:45			3	12	4	18	7	30	15:45			97	361	60	330	157	691
04:00			0		8		8		16:00			101		57		158	
04:15			2		8		10		16:15			109		62		171	
04:30			2		20		22		16:30			103		61		164	
04:45			2	6	13	49	15	55	16:45			90	403	63	243	153	646
05:00			2		23		25		17:00			112		57		169	
05:15			8		42		50		17:15			106		59		165	
05:30			4		51		55		17:30			98		60		158	
05:45			7	21	50	166	57	187	17:45			94	410	35	211	129	621
06:00			8		56		64		18:00			93		50		143	
06:15			9		92		101		18:15			88		61		149	
06:30			15		121		136		18:30			83		58		141	
06:45			23	55	152	421	175	476	18:45			83	347	42	211	125	558
07:00			29		131		160		19:00			69		40		109	
07:15			37		119		156		19:15			84		31		115	
07:30			55		113		168		19:30			83		28		111	
07:45			77	198	113	476	190	674	19:45			86	322	31	130	117	452
08:00			84		121		205		20:00			70		16		86	
08:15			67		126		193		20:15			55		20		75	
08:30			52		123		175		20:30			63		16		79	
08:45			51	254	94	464	145	718	20:45			41	229	21	73	62	302
09:00			37		69		106		21:00			49		5		54	
09:15			32		61		93		21:15			55		17		72	
09:30			28		55		83		21:30			30		13		43	
09:45			32	129	63	248	95	377	21:45			40	174	8	43	48	217
10:00			32		61		93		22:00			29		8		37	
10:15			40		76		116		22:15			16		5		21	
10:30			29		54		83		22:30			21		7		28	
10:45			33	134	50	241	83	375	22:45			10	76	4	24	14	100
11:00			37		50		87		23:00			13		4		17	
11:15			32		56		88		23:15			14		3		17	
11:30			42		57		99		23:30			10		2		12	
11:45			58	169	51	214	109	383	23:45			13	50	1	10	14	60
TOTALS				1037		2316		3353	TOTALS				3184		1956		5140
SPLIT %				30.9%		69.1%		39.5%	SPLIT %				61.9%		38.1%		60.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,221	4,272	8,493

AM Peak Hour			07:30	06:30	07:45	PM Peak Hour			14:15	14:30	14:30
AM Pk Volume			283	523	763	PM Pk Volume			419	372	791
Pk Hr Factor			0.842	0.860	0.930	Pk Hr Factor			0.708	0.775	0.801
7 - 9 Volume	0	0	452	940	1392	4 - 6 Volume	0	0	813	454	1267
7 - 9 Peak Hour			07:30	07:45	07:45	4 - 6 Peak Hour			16:15	16:00	16:15
7 - 9 Pk Volume	0	0	283	483	763	4 - 6 Pk Volume	0	0	414	243	657
Pk Hr Factor	0.000	0.000	0.842	0.958	0.930	Pk Hr Factor	0.000	0.000	0.924	0.964	0.961

Prepared by NDS/ATD

VOLUME

Maxfield Rd just W/o Campo Rd (SR-94)

Day: Tuesday
Date: 9/25/2012

City: Jamul
Project #: CA12_4320_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	169	181	350

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					0		0		0		12:00					5		4		9	
00:15					0		0		0		12:15					2		2		4	
00:30					0		0		0		12:30					3		6		9	
00:45					0		0		0		12:45					5	15	9	21	14	36
01:00					0		0		0		13:00					6		7		13	
01:15					0		0		0		13:15					3		2		5	
01:30					0		0		0		13:30					4		3		7	
01:45					0		0		0		13:45					5	18	1	13	6	31
02:00					0		0		0		14:00					4		3		7	
02:15					0		0		0		14:15					3		3		6	
02:30					0		0		0		14:30					3		6		9	
02:45					0		1	1	1	1	14:45					2	12	4	16	6	28
03:00					0		0		0		15:00					3		6		9	
03:15					0		0		0		15:15					5		4		9	
03:30					0		0		0		15:30					5		4		9	
03:45					0		0		0		15:45					7	20	3	17	10	37
04:00					0		0		0		16:00					7		10		17	
04:15					0		0		0		16:15					3		3		6	
04:30					0		0		0		16:30					6		7		13	
04:45					0		0		0		16:45					7	23	8	28	15	51
05:00					0		0		0		17:00					4		6		10	
05:15					0		0		0		17:15					5		4		9	
05:30					0		0		0		17:30					0		4		4	
05:45					0		1	1	1	1	17:45					3	12	1	15	4	27
06:00					1		0		1		18:00					1		1		2	
06:15					0		0		0		18:15					1		4		5	
06:30					0		1		1		18:30					1		0		1	
06:45					1	2	0	1	1	3	18:45					1	4	2	7	3	11
07:00					1		0		1		19:00					1		2		3	
07:15					2		2		4		19:15					1		3		4	
07:30					3		1		4		19:30					0		0		0	
07:45					3	9	1	4	4	13	19:45					2	4	2	7	4	11
08:00					5		0		5		20:00					1		0		1	
08:15					5		5		10		20:15					1		1		2	
08:30					1		2		3		20:30					1		1		2	
08:45					5	16	2	9	7	25	20:45					0	3	1	3	1	6
09:00					2		2		4		21:00					1		1		2	
09:15					2		2		4		21:15					0		1		1	
09:30					7		1		8		21:30					0		0		0	
09:45					4	15	1	6	5	21	21:45					0	1	1	3	1	4
10:00					3		3		6		22:00					0		0		0	
10:15					2		8		10		22:15					1		0		1	
10:30					1		2		3		22:30					0		1		1	
10:45					2	8	2	15	4	23	22:45					1	2	0	1	1	3
11:00					0		7		7		23:00					0		0		0	
11:15					0		4		4		23:15					0		0		0	
11:30					2		0		2		23:30					0		0		0	
11:45					2	4	2	13	4	17	23:45					1	1	0		1	1
TOTALS						54		50		104	TOTALS						115		131		246
SPLIT %						51.9%		48.1%		29.7%	SPLIT %						46.7%		53.3%		70.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	169	181	350

AM Peak Hour			07:30	10:15	09:30	PM Peak Hour			15:15	16:00	16:00
AM Pk Volume			16	19	29	PM Pk Volume			24	28	51
Pk Hr Factor			0.800	0.594	0.725	Pk Hr Factor			0.857	0.700	0.750
7 - 9 Volume	0	0	25	13	38	4 - 6 Volume	0	0	35	43	78
7 - 9 Peak Hour			07:30	08:00	08:00	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	16	9	25	4 - 6 Pk Volume	0	0	23	28	51
Pk Hr Factor	0.000	0.000	0.800	0.450	0.625	Pk Hr Factor	0.000	0.000	0.821	0.700	0.750

Prepared by NDS/ATD

VOLUME

Jamacha Rd N/o Willow Glen Dr

Day: Wednesday
Date: 9/12/2012

City: Jamul
Project #: CA12_4320_008

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	11,896	11,625	23,521

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			44		21		65		12:00			146		125		271	
00:15			30		24		54		12:15			163		145		308	
00:30			22		21		43		12:30			167		120		287	
00:45			19	115	16	82	35	197	12:45			188	664	150	540	338	1204
01:00			17		14		31		13:00			172		152		324	
01:15			18		22		40		13:15			160		157		317	
01:30			9		8		17		13:30			166		181		347	
01:45			8	52	10	54	18	106	13:45			210	708	200	690	410	1398
02:00			10		19		29		14:00			196		180		376	
02:15			11		17		28		14:15			229		206		435	
02:30			15		15		30		14:30			202		159		361	
02:45			12	48	4	55	16	103	14:45			226	853	194	739	420	1592
03:00			6		7		13		15:00			270		207		477	
03:15			7		9		16		15:15			244		190		434	
03:30			12		12		24		15:30			226		215		441	
03:45			3	28	3	31	6	59	15:45			231	971	236	848	467	1819
04:00			12		5		17		16:00			249		242		491	
04:15			8		9		17		16:15			283		202		485	
04:30			6		10		16		16:30			231		225		456	
04:45			14	40	17	41	31	81	16:45			253	1016	228	897	481	1913
05:00			18		18		36		17:00			271		228		499	
05:15			17		24		41		17:15			255		235		490	
05:30			24		29		53		17:30			241		211		452	
05:45			43	102	53	124	96	226	17:45			253	1020	235	909	488	1929
06:00			54		67		121		18:00			239		215		454	
06:15			43		81		124		18:15			193		218		411	
06:30			108		129		237		18:30			203		186		389	
06:45			131	336	209	486	340	822	18:45			184	819	146	765	330	1584
07:00			179		188		367		19:00			191		179		370	
07:15			167		203		370		19:15			175		157		332	
07:30			171		202		373		19:30			206		161		367	
07:45			154	671	245	838	399	1509	19:45			167	739	151	648	318	1387
08:00			186		177		363		20:00			153		146		299	
08:15			132		171		303		20:15			127		132		259	
08:30			172		214		386		20:30			118		129		247	
08:45			142	632	215	777	357	1409	20:45			114	512	96	503	210	1015
09:00			121		163		284		21:00			124		110		234	
09:15			128		196		324		21:15			122		98		220	
09:30			139		175		314		21:30			88		104		192	
09:45			134	522	178	712	312	1234	21:45			92	426	86	398	178	824
10:00			153		150		303		22:00			83		62		145	
10:15			118		132		250		22:15			71		84		155	
10:30			120		140		260		22:30			63		58		121	
10:45			147	538	135	557	282	1095	22:45			65	282	42	246	107	528
11:00			138		156		294		23:00			61		54		115	
11:15			162		144		306		23:15			49		44		93	
11:30			153		124		277		23:30			46		26		72	
11:45			157	610	109	533	266	1143	23:45			36	192	28	152	64	344
TOTALS				3694		4290		7984	TOTALS				8202		7335		15537
SPLIT %				46.3%		53.7%		33.9%	SPLIT %				52.8%		47.2%		66.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	11,896	11,625	23,521

AM Peak Hour			07:15	07:00	07:00	PM Peak Hour			16:15	16:30	17:00
AM Pk Volume			678	838	1509	PM Pk Volume			1038	916	1929
Pk Hr Factor			0.911	0.855	0.945	Pk Hr Factor			0.917	0.974	0.966
7 - 9 Volume	0	0	1303	1615	2918	4 - 6 Volume	0	0	2036	1806	3842
7 - 9 Peak Hour			07:15	07:00	07:00	4 - 6 Peak Hour			16:15	16:30	17:00
7 - 9 Pk Volume	0	0	678	838	1509	4 - 6 Pk Volume	0	0	1038	916	1929
Pk Hr Factor	0.000	0.000	0.911	0.855	0.945	Pk Hr Factor	0.000	0.000	0.917	0.974	0.966

Prepared by National Data & Surveying Services

CLASSIFICATION

SR-94 (Campo Rd) btwn Cougar Canyon Rd & Jamacha Rd

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	44	11	0	4	0	0	0	2	0	0	0	0	61
01:00	0	34	9	0	2	0	0	0	0	0	0	0	0	45
02:00	0	22	5	0	0	0	0	0	0	0	0	0	0	27
03:00	0	38	9	0	1	0	0	0	1	0	0	0	0	49
04:00	0	79	31	0	10	0	0	0	0	0	0	0	0	120
05:00	0	328	110	0	26	0	0	0	3	0	3	0	0	470
06:00	0	743	202	1	83	0	0	0	10	0	5	0	0	1044
07:00	2	922	186	10	74	2	0	2	20	0	1	0	0	1219
08:00	7	1505	269	27	77	1	0	2	55	0	0	0	0	1943
09:00	1	836	192	4	70	0	0	0	20	1	5	0	0	1129
10:00	1	656	167	1	69	0	0	0	21	0	2	0	0	917
11:00	0	619	162	4	65	1	0	0	15	0	5	0	0	871
12:00 PM	1	728	154	7	62	0	0	0	15	0	1	0	0	968
13:00	0	923	173	2	69	1	0	0	16	0	2	0	0	1186
14:00	0	1075	290	12	101	0	0	0	24	1	4	0	0	1507
15:00	2	1078	311	13	128	0	0	3	28	0	5	0	0	1568
16:00	0	1042	286	10	114	0	0	0	24	0	1	0	0	1477
17:00	1	1198	280	7	98	0	0	0	18	0	0	0	0	1602
18:00	1	894	219	3	57	0	0	0	17	0	0	0	0	1191
19:00	0	567	148	1	50	0	0	0	13	0	0	0	0	779
20:00	0	436	121	0	33	0	0	0	4	0	0	0	0	594
21:00	0	320	79	0	25	0	0	0	6	0	0	0	0	430
22:00	0	196	42	2	10	0	0	0	1	0	0	0	0	251
23:00	0	125	33	0	5	0	0	0	4	0	0	0	0	167
Totals	16	14408	3489	104	1233	5		7	317	2	34			19615
% of Totals	0%	73%	18%	1%	6%	0%		0%	2%	0%	0%			100%

AM Volumes	11	5826	1353	47	481	4	0	4	147	1	21	0	0	7895
% AM	0%	30%	7%	0%	2%	0%		0%	1%	0%	0%			40%
AM Peak Hour	08:00	08:00	08:00	08:00	06:00	07:00		07:00	08:00	09:00	06:00			08:00
Volume	7	1505	269	27	83	2		2	55	1	5			1943
PM Volumes	5	8582	2136	57	752	1	0	3	170	1	13	0	0	11720
% PM	0%	44%	11%	0%	4%	0%		0%	1%	0%	0%			60%
PM Peak Hour	15:00	17:00	15:00	15:00	15:00	13:00		15:00	15:00	14:00	15:00			17:00
Volume	2	1198	311	13	128	1		3	28	1	5			1602

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume		%	Volume		%	Volume		%	Volume		%
	3162	⟷	16%	2154	⟷	11%	3079	⟷	16%	11220	⟷	57%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

SPEED

SR-94 (Campo Rd) btwn Cougar Canyon Rd & Jamacha Rd

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_001

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	0	0	1	10	19	15	8	7	1	0	61
01:00	0	0	0	0	1	4	7	12	16	3	2	0	0	45
02:00	0	0	0	0	0	1	2	4	14	4	1	1	0	27
03:00	0	0	0	0	1	1	2	9	25	8	3	0	0	49
04:00	0	0	0	0	2	6	8	32	45	21	6	0	0	120
05:00	0	0	0	1	3	13	61	197	147	43	4	1	0	470
06:00	0	1	1	8	23	114	324	402	135	31	4	1	0	1044
07:00	23	14	6	17	41	106	331	415	223	40	3	0	0	1219
08:00	82	41	46	100	193	312	500	475	153	37	4	0	0	1943
09:00	11	5	9	23	54	146	323	365	167	23	2	1	0	1129
10:00	0	0	1	6	12	92	285	309	158	51	3	0	0	917
11:00	0	0	2	8	16	117	294	261	121	44	8	0	0	871
12:00 PM	1	1	2	5	34	104	313	312	168	22	5	1	0	968
13:00	0	0	1	10	46	203	389	328	155	43	10	1	0	1186
14:00	1	1	7	19	80	215	471	391	212	86	23	1	0	1507
15:00	15	18	23	29	102	250	402	400	224	86	15	4	0	1568
16:00	0	2	4	23	45	175	442	431	247	84	19	4	1	1477
17:00	0	0	5	18	70	231	471	456	234	96	16	5	0	1602
18:00	0	0	2	8	43	155	326	364	194	74	23	2	0	1191
19:00	1	0	3	0	18	92	220	230	137	62	13	3	0	779
20:00	0	0	0	0	10	43	115	186	146	62	25	7	0	594
21:00	0	0	0	0	3	17	87	117	119	59	21	6	1	430
22:00	0	0	0	0	3	9	34	62	81	43	14	3	2	251
23:00	0	0	0	0	3	8	13	41	50	39	11	2	0	167
Totals	134	83	112	275	803	2415	5430	5818	3186	1069	242	44	4	19615
% of Totals	1%	0%	1%	1%	4%	12%	28%	30%	16%	5%	1%	0%	0%	100%

AM Volumes	116	61	65	163	346	913	2147	2500	1219	313	47	5	0	7895
% AM	1%	0%	0%	1%	2%	5%	11%	13%	6%	2%	0%	0%		40%
AM Peak Hour	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	07:00	10:00	11:00			08:00
Volume	82	41	46	100	193	312	500	475	223	51	8	1		1943
PM Volumes	18	22	47	112	457	1502	3283	3318	1967	756	195	39	4	11720
% PM	0%	0%	0%	1%	2%	8%	17%	17%	10%	4%	1%	0%	0%	60%
PM Peak Hour	15:00	15:00	15:00	15:00	15:00	15:00	14:00	17:00	16:00	17:00	20:00	20:00	22:00	17:00
Volume	15	18	23	29	102	250	471	456	247	96	25	7	2	1602

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume		%	Volume		%	Volume		%	Volume		%
	3162	⟷	16%	2154	⟷	11%	3079	⟷	16%	11220	⟷	57%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
SR-94 (Campo Rd)	Summary	38	45	45	53	57	19615

Prepared by National Data & Surveying Services

CLASSIFICATION

SR-94 (Campo Rd) btwn Steele Canyon Rd & Lorrel Pl

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_002e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	40	14	0	2	0	0	0	2	0	0	0	0	58
01:00	0	20	3	0	1	0	0	0	0	0	0	0	0	24
02:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
03:00	0	13	6	0	0	0	0	0	0	0	0	0	0	19
04:00	0	12	3	0	2	0	0	0	0	0	0	0	0	17
05:00	0	29	17	1	5	0	0	0	1	0	3	0	0	56
06:00	0	94	49	1	21	1	0	1	3	0	0	0	0	170
07:00	0	179	65	3	22	0	0	0	9	0	1	0	0	279
08:00	0	236	76	1	26	0	0	0	7	0	0	0	0	346
09:00	4	201	87	2	37	0	0	0	1	0	0	0	0	332
10:00	1	194	75	0	20	0	0	0	2	0	1	0	0	293
11:00	0	235	88	0	28	0	0	0	6	0	5	0	0	362
12:00 PM	0	253	84	4	37	0	0	0	7	0	1	0	0	386
13:00	0	298	102	1	29	0	0	0	7	0	1	0	0	438
14:00	0	465	115	2	38	0	0	0	8	0	0	0	0	628
15:00	1	533	193	1	56	0	0	0	5	0	3	0	0	792
16:00	0	608	179	4	50	1	0	0	7	0	2	0	0	851
17:00	1	659	157	3	50	0	0	0	4	0	0	0	0	874
18:00	0	562	141	1	47	0	0	1	3	0	0	0	0	755
19:00	1	405	98	0	28	0	0	0	9	0	0	0	0	541
20:00	0	318	69	0	22	0	0	0	2	0	0	0	0	411
21:00	0	255	45	0	19	0	0	0	4	0	0	0	0	323
22:00	1	132	23	2	12	0	0	0	0	0	0	0	0	170
23:00	0	107	17	0	2	0	0	0	2	0	0	0	0	128
Totals	9	5860	1709	26	554	2		2	89		17			8268
% of Totals	0%	71%	21%	0%	7%	0%		0%	1%		0%			100%

AM Volumes	5	1265	486	8	164	1	0	1	31	0	10	0	0	1971
% AM	0%	15%	6%	0%	2%	0%		0%	0%		0%			24%
AM Peak Hour	09:00	08:00	11:00	07:00	09:00	06:00		06:00	07:00		11:00			11:00
Volume	4	236	88	3	37	1		1	9		5			362
PM Volumes	4	4595	1223	18	390	1	0	1	58	0	7	0	0	6297
% PM	0%	56%	15%	0%	5%	0%		0%	1%		0%			76%
PM Peak Hour	15:00	17:00	15:00	12:00	15:00	16:00		18:00	19:00		15:00			17:00
Volume	1	659	193	4	56	1		1	9		3			874

Directional Peak Periods All Classes	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume		%	Volume		%	Volume		%	Volume		%
	625	⟷	8%	824	⟷	10%	1725	⟷	21%	5094	⟷	62%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

SPEED

SR-94 (Campo Rd) btwn Steele Canyon Rd & Lorrel Pl

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_002w

West Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	0	0	2	7	7	8	2	5	0	0	31
01:00	0	0	0	0	0	0	0	6	9	1	3	0	0	19
02:00	0	0	0	0	0	0	3	3	3	2	0	0	0	11
03:00	0	0	0	0	0	1	2	4	17	10	1	0	0	35
04:00	0	0	0	0	1	2	5	22	41	27	4	0	0	102
05:00	0	0	0	1	7	20	43	161	171	43	2	0	0	448
06:00	7	5	8	14	41	99	247	312	118	16	0	0	0	867
07:00	4	11	14	15	32	78	265	341	124	9	0	0	0	893
08:00	30	37	77	46	58	109	191	229	76	6	1	0	0	860
09:00	1	0	3	3	22	50	170	234	69	6	1	0	0	559
10:00	0	0	4	8	30	70	173	185	59	11	0	0	0	540
11:00	0	0	1	3	15	59	137	194	56	5	0	0	0	470
12:00 PM	1	0	0	10	28	56	147	177	62	10	0	0	0	491
13:00	0	0	2	11	30	47	105	153	78	14	1	0	0	441
14:00	8	8	18	17	36	61	134	126	53	10	0	0	0	471
15:00	0	1	3	10	34	49	126	175	81	9	0	0	0	488
16:00	0	2	7	12	16	36	105	169	67	5	1	0	0	420
17:00	0	3	5	12	25	59	119	151	42	6	1	0	0	423
18:00	0	0	1	11	27	42	144	112	32	1	0	0	0	370
19:00	0	0	0	2	8	36	67	68	21	11	0	0	0	213
20:00	0	0	0	2	17	14	39	49	21	6	1	0	0	149
21:00	0	0	0	3	3	11	29	52	18	6	1	0	0	123
22:00	0	0	0	2	2	4	15	23	21	5	0	0	0	72
23:00	0	0	0	0	2	2	7	15	14	5	0	0	0	45
Totals	51	67	143	182	434	907	2280	2968	1261	226	22			8541
% of Totals	1%	1%	2%	2%	5%	11%	27%	35%	15%	3%	0%			100%

AM Volumes	42	53	107	90	206	490	1243	1698	751	138	17	0	0	4835
% AM	0%	1%	1%	1%	2%	6%	15%	20%	9%	2%	0%			57%
AM Peak Hour	08:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	05:00	05:00				07:00
Volume	30	37	77	46	58	109	265	341	171	43	5			893
PM Volumes	9	14	36	92	228	417	1037	1270	510	88	5	0	0	3706
% PM	0%	0%	0%	1%	3%	5%	12%	15%	6%	1%	0%			43%
PM Peak Hour	14:00	14:00	14:00	14:00	14:00	14:00	12:00	12:00	15:00	13:00	13:00			12:00
Volume	8	8	18	17	36	61	147	177	81	14	1			491

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume		%	Volume		%	Volume		%	Volume		%
	1753	⟷	21%	932	⟷	11%	843	⟷	10%	5013	⟷	59%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
SR-94 (Campo Rd)	East Bound	38	45	45	51	54	8268
SR-94 (Campo Rd)	West Bound	37	45	44	51	54	8541

Prepared by National Data & Surveying Services

CLASSIFICATION

SR-94 (Campo Rd) btwn Maxfield Rd & Melody Rd

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	1	24	9	0	2	0	0	1	2	0	0	0	0	39
01:00	0	13	1	0	1	0	0	0	0	0	0	0	0	15
02:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
03:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
04:00	0	9	3	0	1	0	0	0	0	0	0	0	0	13
05:00	0	18	8	1	2	0	0	1	1	0	2	0	0	33
06:00	1	53	23	2	12	3	0	2	3	0	0	0	0	99
07:00	3	76	23	2	9	0	0	1	3	1	1	0	0	119
08:00	5	123	35	3	13	0	0	3	1	0	0	0	0	183
09:00	0	96	44	1	16	0	0	0	2	0	0	0	0	159
10:00	0	87	33	0	10	1	0	0	1	0	1	0	0	133
11:00	0	94	27	0	14	1	0	2	1	0	5	0	0	144
12:00 PM	4	107	33	1	12	0	0	3	3	0	1	0	0	164
13:00	0	145	41	1	10	2	0	4	1	0	1	0	0	205
14:00	2	182	38	1	9	0	0	0	9	0	0	0	0	241
15:00	0	282	90	3	29	0	0	0	6	0	3	0	0	413
16:00	4	335	75	3	20	1	0	2	4	0	2	0	0	446
17:00	3	331	76	3	11	0	0	1	1	0	0	0	0	426
18:00	2	255	57	1	17	2	0	1	5	0	0	0	0	340
19:00	1	190	41	0	9	2	0	4	5	0	0	0	0	252
20:00	1	119	29	0	9	2	0	1	2	0	0	0	0	163
21:00	3	116	13	0	5	0	0	2	3	0	0	0	0	142
22:00	0	61	9	1	2	0	0	1	0	0	0	0	0	74
23:00	0	45	9	0	1	0	0	0	1	0	0	0	0	56
Totals	30	2779	720	23	214	14		29	54	1	16			3880
% of Totals	1%	72%	19%	1%	6%	0%		1%	1%	0%	0%			100%

AM Volumes	10	611	209	9	80	5	0	10	14	1	9	0	0	958
% AM	0%	16%	5%	0%	2%	0%		0%	0%	0%	0%			25%
AM Peak Hour	08:00	08:00	09:00	08:00	09:00	06:00		08:00	06:00	07:00	11:00			08:00
Volume	5	123	44	3	16	3		3	3	1	5			183
PM Volumes	20	2168	511	14	134	9	0	19	40	0	7	0	0	2922
% PM	1%	56%	13%	0%	3%	0%		0%	1%		0%			75%
PM Peak Hour	12:00	16:00	15:00	15:00	15:00	13:00		13:00	14:00		15:00			16:00
Volume	4	335	90	3	29	2		4	9		3			446

Directional Peak Periods All Classes	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume		%	Volume		%	Volume		%	Volume		%
	302	⟷	8%	369	⟷	10%	872	⟷	22%	2337	⟷	60%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

SPEED

SR-94 (Campo Rd) btwn Maxfield Rd & Melody Rd

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_003s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	0	0	1	3	2	11	7	7	6	2	39
01:00	0	0	0	0	0	0	0	2	8	3	1	0	1	15
02:00	0	0	0	0	0	1	0	2	2	3	2	0	0	10
03:00	0	0	0	1	0	0	0	1	1	4	2	1	1	11
04:00	0	0	0	0	0	0	1	0	4	3	1	2	2	13
05:00	0	0	0	0	2	1	0	5	8	8	7	1	1	33
06:00	0	0	1	1	2	0	3	23	37	23	6	1	2	99
07:00	0	0	1	0	0	0	3	30	43	35	6	0	1	119
08:00	1	0	0	4	0	3	16	65	57	28	9	0	0	183
09:00	0	0	2	1	0	2	9	46	65	24	7	2	1	159
10:00	0	0	0	0	3	1	4	47	53	21	3	1	0	133
11:00	1	0	0	1	2	9	17	41	49	19	5	0	0	144
12:00 PM	0	1	1	2	2	6	15	53	58	21	4	1	0	164
13:00	0	0	0	1	0	5	24	54	78	34	8	1	0	205
14:00	0	0	0	0	0	4	16	77	95	40	8	1	0	241
15:00	0	0	0	0	1	5	41	126	174	58	6	2	0	413
16:00	0	0	0	0	0	4	49	198	145	46	4	0	0	446
17:00	0	0	0	1	4	2	29	122	174	77	17	0	0	426
18:00	0	0	0	0	0	3	29	90	155	53	10	0	0	340
19:00	0	0	0	0	0	9	21	78	96	30	18	0	0	252
20:00	0	0	0	0	1	5	20	55	45	28	6	3	0	163
21:00	0	0	0	0	0	1	8	37	59	26	10	1	0	142
22:00	0	0	0	0	0	1	4	9	26	21	9	4	0	74
23:00	0	0	0	0	0	0	1	9	18	16	9	2	1	56
Totals	2	1	5	12	17	63	313	1172	1461	628	165	29	12	3880
% of Totals	0%	0%	0%	0%	0%	2%	8%	30%	38%	16%	4%	1%	0%	100%

AM Volumes	2	0	4	8	9	18	56	264	338	178	56	14	11	958
% AM	0%		0%	0%	0%	0%	1%	7%	9%	5%	1%	0%	0%	25%
AM Peak Hour	08:00		09:00	08:00	10:00	11:00	11:00	08:00	09:00	07:00	08:00			08:00
Volume	1		2	4	3	9	17	65	65	35	9	6	2	183
PM Volumes	0	1	1	4	8	45	257	908	1123	450	109	15	1	2922
% PM		0%	0%	0%	0%	1%	7%	23%	29%	12%	3%	0%	0%	75%
PM Peak Hour		12:00	12:00	12:00	17:00	19:00	16:00	16:00	15:00	17:00	19:00	22:00	23:00	16:00
Volume		1	1	2	4	9	49	198	174	77	18	4	1	446

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds	Volume		%	Volume		%	Volume		%	Volume		%
	302	⟷	8%	369	⟷	10%	872	⟷	22%	2337	⟷	60%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
SR-94 (Campo Rd)	North Bound	47	54	53	60	65	3946
SR-94 (Campo Rd)	South Bound	46	51	51	57	60	3880

Prepared by National Data & Surveying Services

CLASSIFICATION

SR-94 (Campo Rd) btwn Rancho Jamul Dr & Melody Rd

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_004s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	21	9	0	2	0	0	0	2	0	0	0	0	34
01:00	0	13	2	0	1	0	0	0	1	0	0	0	0	17
02:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
03:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
04:00	0	10	3	0	2	0	0	0	0	0	0	0	0	15
05:00	0	17	7	1	1	0	0	1	1	0	3	0	0	31
06:00	1	47	23	2	13	2	0	1	2	0	0	0	0	91
07:00	0	72	26	2	15	1	0	1	4	1	1	0	0	123
08:00	5	113	26	1	15	0	0	2	4	0	0	0	0	166
09:00	0	85	36	1	19	1	0	1	2	0	0	0	0	145
10:00	0	77	33	0	12	2	0	0	3	0	1	0	0	128
11:00	1	84	28	0	13	3	0	3	0	0	5	0	0	137
12:00 PM	4	94	32	1	12	0	0	3	4	0	1	0	0	151
13:00	0	128	41	1	12	1	0	1	5	0	1	0	0	190
14:00	2	166	49	0	10	0	0	4	6	0	0	0	0	237
15:00	0	267	90	3	34	0	0	1	4	0	3	0	0	402
16:00	6	304	79	2	22	2	0	3	5	0	2	0	0	425
17:00	2	297	89	3	15	0	0	0	2	0	0	0	0	408
18:00	3	244	59	2	17	1	0	1	4	0	0	0	0	331
19:00	0	174	48	0	12	0	0	3	5	0	0	0	0	242
20:00	1	106	27	0	11	0	0	2	1	0	0	0	0	148
21:00	1	106	16	0	6	0	0	3	3	0	0	0	0	135
22:00	0	54	7	1	2	0	0	0	1	0	0	0	0	65
23:00	0	43	6	0	4	0	0	0	2	0	0	0	0	55
Totals	26	2540	739	20	250	13		30	61	1	17			3697
% of Totals	1%	69%	20%	1%	7%	0%		1%	2%	0%	0%			100%

AM Volumes	7	557	196	7	93	9	0	9	19	1	10	0	0	908
% AM	0%	15%	5%	0%	3%	0%		0%	1%	0%	0%			25%
AM Peak Hour	08:00	08:00	09:00	06:00	09:00	11:00		11:00	07:00	07:00	11:00			08:00
Volume	5	113	36	2	19	3		3	4	1	5			166
PM Volumes	19	1983	543	13	157	4	0	21	42	0	7	0	0	2789
% PM	1%	54%	15%	0%	4%	0%		1%	1%		0%			75%
PM Peak Hour	16:00	16:00	15:00	15:00	15:00	16:00		14:00	14:00		15:00			16:00
Volume	6	304	90	3	34	2		4	6		3			425

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume		%	Volume		%	Volume		%	Volume		%
	289	⟷	8%	341	⟷	9%	833	⟷	23%	2234	⟷	60%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

SPEED

SR-94 (Campo Rd) btwn Rancho Jamul Dr & Melody Rd

Day: Wednesday
Date: 10/17/2012

City: Jamul
Project #: CA12_4374_004

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	0	0	0	0	4	12	11	15	4	3	49
01:00	0	0	0	0	0	1	4	8	5	10	4	1	0	33
02:00	0	0	0	0	0	1	0	3	4	7	3	1	2	21
03:00	0	0	0	0	0	0	2	1	2	12	7	1	1	26
04:00	0	0	0	0	0	0	2	4	10	24	17	6	0	63
05:00	0	0	0	0	1	0	2	21	64	100	61	20	2	271
06:00	0	0	0	0	3	8	41	89	233	123	28	9	1	535
07:00	0	0	0	0	2	23	24	87	226	139	33	9	0	543
08:00	0	0	0	1	0	4	24	85	210	142	40	1	0	507
09:00	0	0	0	0	0	8	22	93	144	81	25	5	3	381
10:00	0	0	0	0	8	12	23	85	128	70	24	5	0	355
11:00	0	0	0	0	1	10	21	91	113	99	25	1	0	361
12:00 PM	0	0	0	1	4	13	35	85	119	69	19	3	1	349
13:00	0	0	0	0	5	6	26	85	164	81	31	4	0	402
14:00	0	0	0	0	3	7	31	124	177	76	18	6	0	442
15:00	0	0	0	0	1	9	39	118	267	117	27	5	1	584
16:00	0	0	0	0	1	3	35	170	256	135	17	2	0	619
17:00	0	0	0	0	0	3	17	133	237	141	32	6	1	570
18:00	0	0	0	0	3	5	31	111	192	105	16	0	0	463
19:00	0	0	0	0	0	6	20	77	126	62	23	4	0	318
20:00	0	0	0	0	2	6	25	46	87	39	12	1	0	218
21:00	0	0	0	0	0	1	6	44	77	51	15	2	1	197
22:00	0	0	0	0	0	1	3	16	23	35	16	5	0	99
23:00	0	0	0	0	2	4	3	8	22	21	17	4	0	81
Totals				2	36	131	436	1588	2898	1750	525	105	16	7487
% of Totals				0%	0%	2%	6%	21%	39%	23%	7%	1%	0%	100%

AM Volumes	0	0	0	1	15	67	165	571	1151	818	282	63	12	3145
% AM				0%	0%	1%	2%	8%	15%	11%	4%	1%	0%	42%
AM Peak Hour				08:00	10:00	07:00	06:00	09:00	06:00	08:00	05:00	05:00		07:00
Volume				1	8	23	41	93	233	142	61	20	3	543
PM Volumes	0	0	0	1	21	64	271	1017	1747	932	243	42	4	4342
% PM				0%	0%	1%	4%	14%	23%	12%	3%	1%	0%	58%
PM Peak Hour				12:00	13:00	12:00	15:00	16:00	15:00	17:00	17:00	14:00	12:00	16:00
Volume				1	5	13	39	170	267	141	32	6	1	619

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume		%	Volume		%	Volume		%	Volume		%
	1050	↔	14%	751	↔	10%	1189	↔	16%	4497	↔	60%

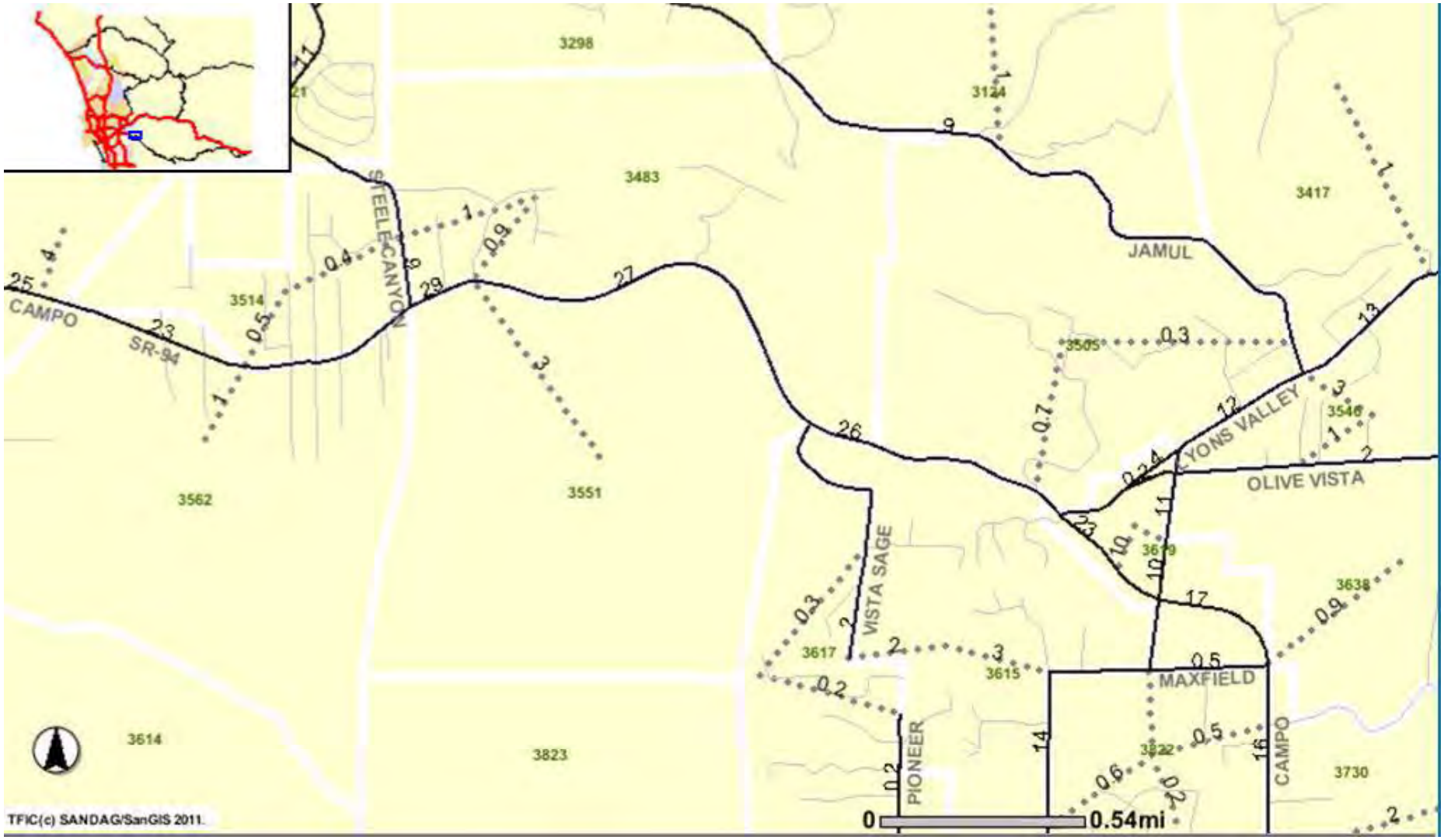
Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
SR-94 (Campo Rd)	Summary	47	53	53	59	63	7487

APPENDIX C

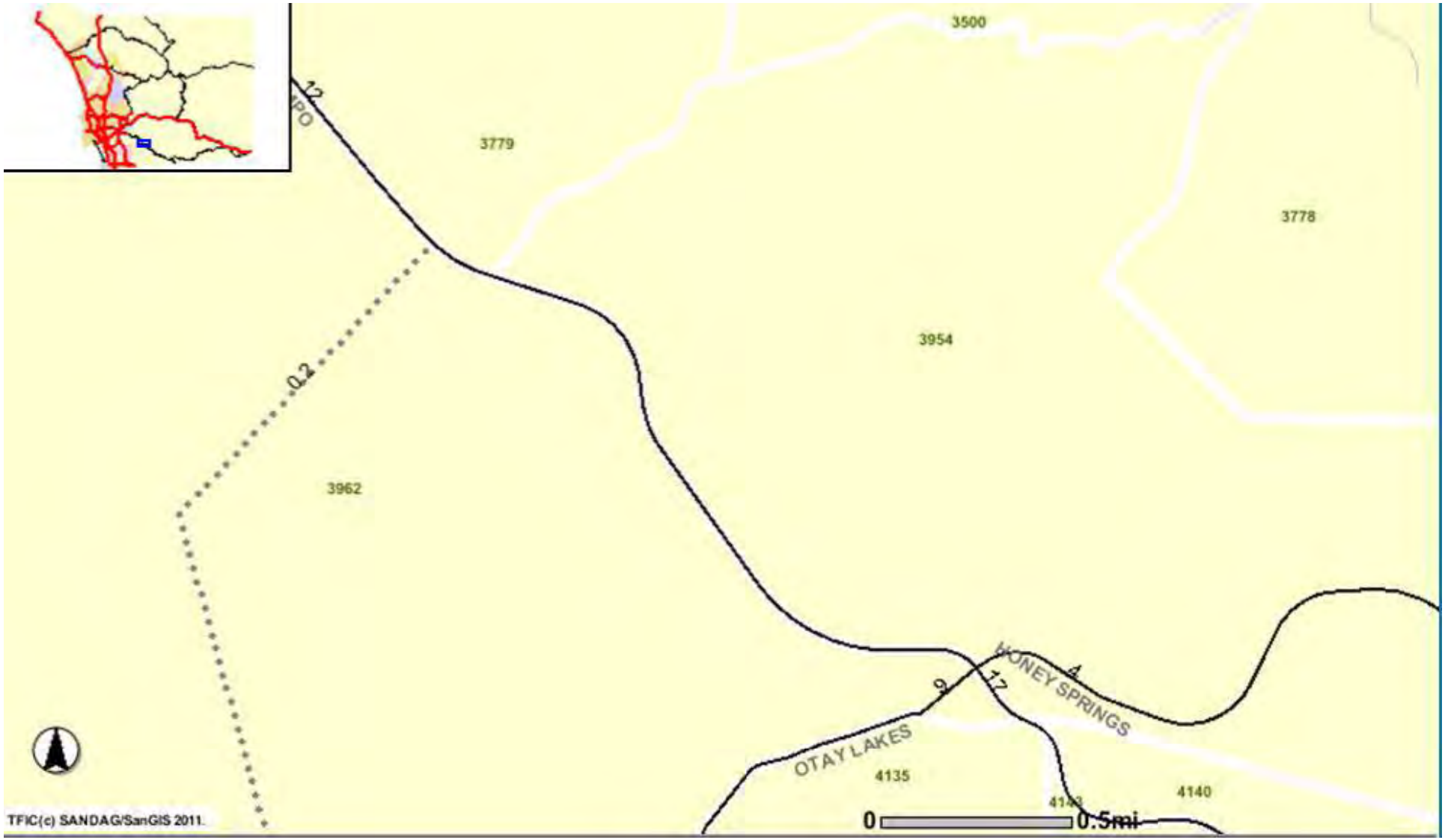
- Series 11 and Series 12 Future Year Volumes Forecast

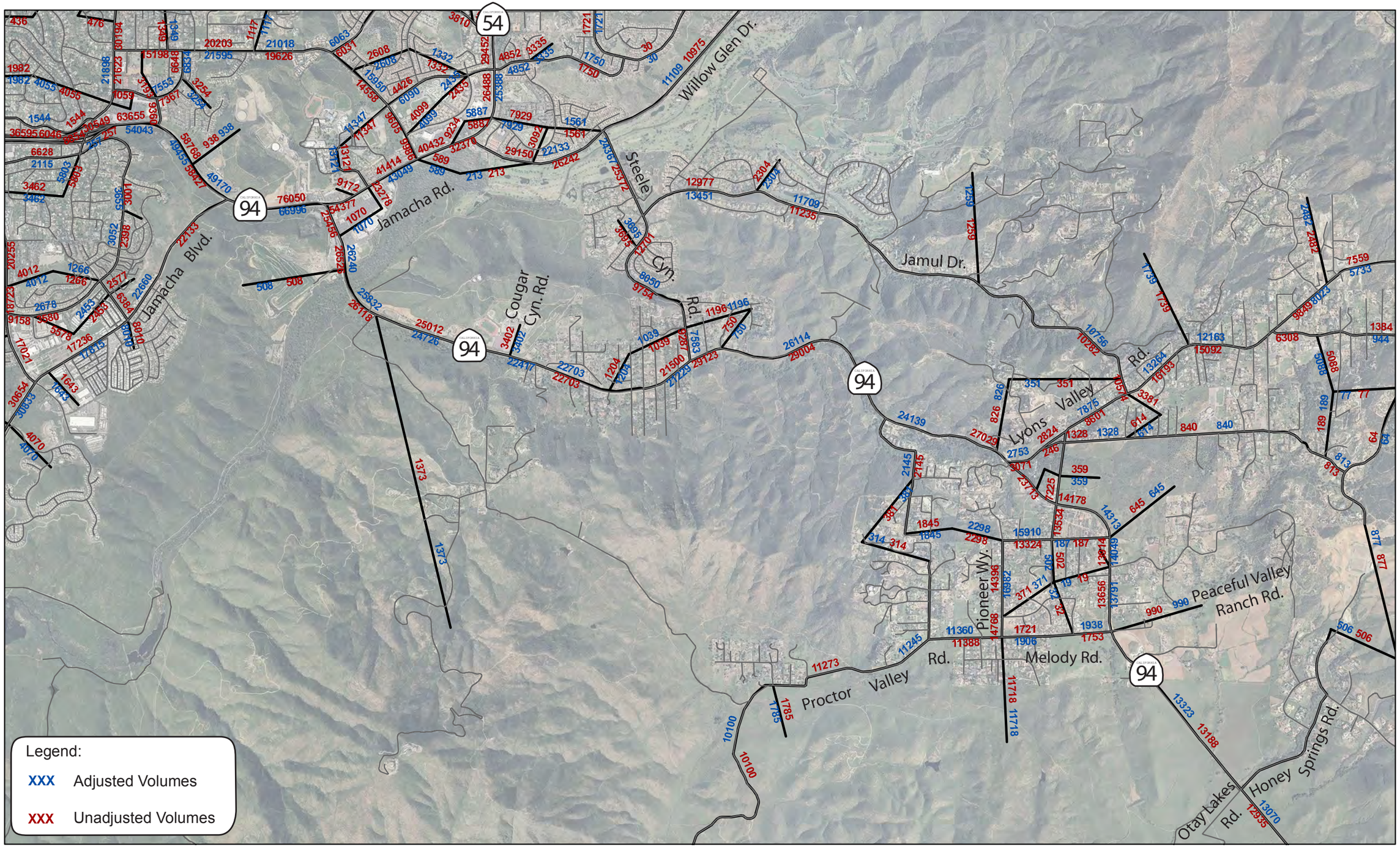
RAMP
VIA MERCADO
FURY
BRABHAM
JAMACHA ROAD
JAMACHA BOULEVARD
DEL RIO
AUSTIN
CALAVO
CAMPO
3160
3230
3193
3284
3359
3286
3315
3294
3292
3333
3360
3383
3407
3394
3392
3399
3468
3479
3493
3457
3413
3503
3508
3524
TFIC(c) SANDAG/SanGIS 2011.
0
0.37mi

WILLOW GLEN
STEELE CANYON
JAMUL
CAMPO
SR-94
CAMPO
3294
3407
3399
3413
3457
3039
3298
3421
3483
3514
3562
3551
3614
TFIC(c) SANDAG/SanGIS 2011.
0
0.37mi


3298
3124
3483
3417
JAMUL
STEELE CANYON
CAMPO
SR-94
3514
3505
3546
LYONS VALLEY
OLIVE VISTA
3562
3551
VISTA SAGE
3638
3617
3615
MAXFIELD
3614
3823
PIONEER
CAMPO
3730
0
0.54mi
TFIC(c) SANDAG/SanGIS 2011.

OLIVE VISTA
VISTA SAG
MAXFIELD
PROCTOR VALLEY
CAMPO
PIONEER
MELODY
RANCHO JAMUL
SC 760
3505
3546
3526
3638
3615
3617
3822
3730
3779
3823
3919
3962
TFIC(c) SANDAG/SanGIS 2011.
0
0.54mi


3500
12
3779
3778
3954
0.2
3962
HONEY SPRINGS
4
17
9
OTAY LAKES
4135
4140
0
0.5mi
TFIC(c) SANDAG/SanGIS 2011.


Willow Glen Dr.
Steele Cyn. Rd.
Jamul Dr.
Jamacha Rd.
Jamacha Blvd.
Cougar Cyn. Rd.
Lyons Valley Rd.
Pioneer Wy.
Peaceful Valley Ranch Rd.
Melody Rd.
Proctor Valley Rd.
Otay Lakes Rd.
Honey Springs Rd.
54
94
Legend:
XXX Adjusted Volumes
XXX Unadjusted Volumes

APPENDIX D

- NCHRP 255 Methodology and Forecast Worksheets

CHAPTER EIGHT
TURNING MOVEMENT PROCEDURES

GENERAL

Turning movement data are often required for the planning and design of highway intersections and interchanges. Computerized traffic assignments rarely provide turning movement forecasts that can be directly used for these purposes, resulting in a need for significant refinement. Often the system-level forecasts do not provide any turning movement data. Therefore, procedures are presented that enable the analyst to develop these data from various sources and for various uses. These procedures can be used independently or to supplement the link refinement and detailing procedures documented in Chapters 4 through 7.

The appropriate procedure to use is dependent on several factors, including the availability or suitability of the following:

1. Future year turning volume forecasts.
2. Directional or nondirectional volume forecasts. Directional turning volumes are specific to each direction of travel. Nondirectional turning volumes represent two-way volumes passing between adjacent links. Figure A-58 illustrates these differences using a common four-way intersection.
3. Actual base year turning movement counts.
4. Base year turning movement assignments.
5. Desired time period (e.g., peak hour, 24-hour).
6. Number of intersection approaches.

In some cases the analyst must combine two or more procedures in order to arrive at a reasonable turning movement estimate.

Three sets of procedures are presented in this chapter. They are the following:

1. Factoring Procedures--includes use of either Ratio Method or Difference Method.
2. Iterative Procedures--includes separate Directional and Nondirectional Volume Methods.
3. "T" Intersection Procedures--includes separate Directional and Nondirectional Turning Movement Methods.

The primary feature of the factoring procedures is their computational simplicity. By the same token, their simplicity means that several potentially key factors have not been considered. The procedures also require actual base year turning movement counts as well as a base year turning movement assignment, thus limiting their applicability.

The iterative procedures are significantly different, depending on whether directional or nondirectional turning volumes are used as input. The directional volume method adjusts future year turning movements to match as closely as possible a predetermined estimate of turning percentages. It can be applied whether or not base year turning movements are known. The method can become time-consuming if a significant number of iteration calculations are required. The nondirectional volume method requires considerably more judgment on the part of the analyst. Typically these turns are derived only from a knowledge of nondirectional approach link volumes and an estimate of the total turn percentage at the intersection. Therefore, the task is to produce turning movements that appear to be reasonable based on the given approach volumes and the distribution of adjacent land uses. The results are not intended to be used for design purposes.

The "T" intersection procedures were developed to address the uniqueness of an intersection having only three approaches. A unique solution can be obtained for nondirectional turning volumes

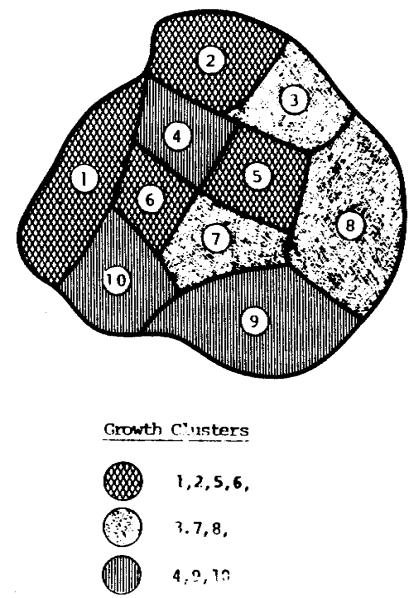


Figure A-57. Zones clustered by growth.

if the approach volumes are known. Directional turning volumes can also be directly computed if the directional approach volumes and one turning movement are known. Otherwise, reasonable estimates of directional turning volumes can be made from nondirectional volumes using some basic relationships characteristic of a "T" intersection.

These procedures are described in the following sections of this chapter.

FACTORING PROCEDURES

Future year turning movement forecasts are frequently based on the relationships between base year assignments and actual base year counts. The assumption used is that the discrepancy between a base year count and a base year assignment is likely to be of the same magnitude in the future year. Given this assumption, the future year turning movements can be modified by comparing the relative ratios or differences between base year link or turning volumes. The procedures are equally valid for producing directional or nondirectional turning movements.

Input Data Requirements

The following directional or nondirectional data are required for both the ratio or difference procedures:

1. Future year turning movement forecast.
2. Base year turning movement assignment.
3. Base year turning movement counts.

The first two data items are obtained from computer assignments, while the actual base year data (item 3) must be obtained from existing counting programs or from field studies.

Directions for Use

Similar computations are performed for the ratio and difference methods, as follows.

Ratio Method

Each turning movement in the future year assignment is factored by the ratio of the base year actual traffic count to the base year assignment.

$$V_{ri} = F_i * (B_{ci}/B_{ai}) \qquad \text{(A-27)}$$

where:

V_{ri} = ratio adjusted future year volume turning movement i;
F_i = future year forecasted volume for turning movement i;
B_{ci} = base year traffic count for turning movement i; and
B_{ai} = base year assigned volume for turning movement i.

Each turning volume is adjusted separately and then summed to produce an adjusted total approach volume.

For example, the numbered intersection as shown in Figure A-59 is provided.

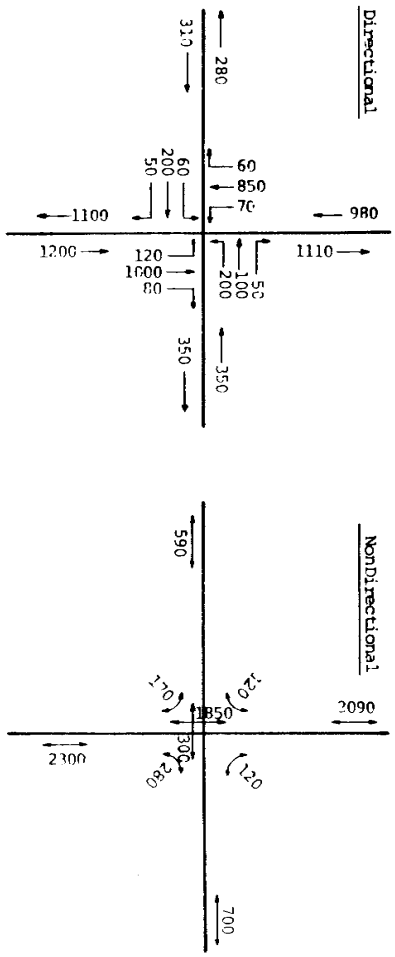


Figure A-58. Directional and nondirectional turning volumes.

Assume the following data for turning movement 3:

$F_3 = 500$

$B_{c3} = 200$

$B_{a3} = 260$

Then:

$V_{r3} = 500 * (200/260) = 385$

Similar calculations would be performed for the other 11 turning movements.

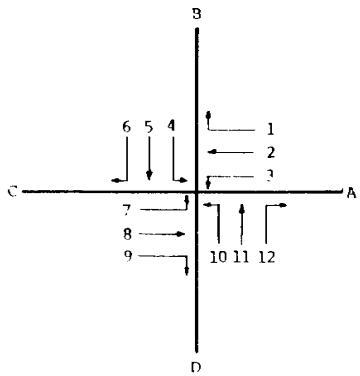


Figure A-59. Example intersection turning movements.

Difference Method

Each turning movement in the future year assignment is factored by the difference between the base year actual traffic count and the base year assignment.

$$V_{di} = F_i + (B_{ci} + B_{ai}) \qquad \text{(A-28)}$$

Where:

V_{di} = difference adjusted future year volume for turning movement i;

F_i = future year forecasted volume for turning movement i;

B_{ci} = base year traffic count for turning movement i; and

B_{ai} = base year assigned volume fo turning movement i.

Each turning volume is adjusted separately and then summed to produce an adjusted total approach volume.

Using the same example from above, the following calculations would occur for turning movement 3 (see Fig. A-59):

$V_{d3} = 500 + (200-260) = 440$

Similar calculations would be performed for the other 11 turning movements.

Both the ratio and the difference methods must be carefully applied to avoid extreme values. In the ratio method, if the base year count is significantly higher or lower than the base year assignment, the adjusted future year volume may be unrealistically high or low. Similarly, in the difference method, extreme discrepancies during the base year can significantly alter the future year volume. Negative values can also occur, which is a disadvantage of the difference method.

Combined Method

The two methods can be combined using a procedure similar to that developed for link volumes by the New York State Department of Transportation (77). The results of the ratio and difference methods are simply averaged to produce the final future adjusted turning volume.

$$(V_{ri} + V_{di}) / 2 = V_{fi} \qquad \text{(A-29)}$$

where:

V_{ri} = ratio adjusted future year volume for turning movement i;

V_{di} = difference adjusted future year volume for turning movement i; and

V_{fi} = final averaged future year volume for turning movement i.

Using the results from the ratio and difference adjustments, the final averaged future year volume for turning movement 3 would be:

$V_{fi} = (385 + 440) / 2 = 413$

This averaging method tends to reduce the extremes experienced by the individual methods. Judgment must still be used, however, to assess whether the resulting turning volumes are realistic. In particular, this method may produce revised future year approach volumes that are significantly different from the future year volumes previously forecast. If desired, the turning movements can be further adjusted using the iterative method described in the next section. The iterative method is most useful when the analyst wishes to retain a specified future year link volume on each intersection approach.

Special Consideration—Lack of Base Year Turning Volumes

The base year volumes B_{ci} and B_{ai} should preferably represent the same turning movement i as that represented by the future volume F_i. Therefore, F_i would be adjusted based on the relative ratio between the actual and assigned base year volume for the specific turning movement i. If base year turning volumes are not available, however, approach link volumes may be substituted for B_{ci} and B_{ai} in the ratio method only. This substitution will result in each turning movement on an approach being adjusted by the same ratio. Obviously, this technique will not produce an adjustment that is as specific as that derived by comparing individual base year turning movements. However, it will account for major deviations between the actual and assigned volumes.

For example, on approach B to the intersection shown in Figure A-59, assume the following information:

Base year actual approach volume (link) = 500

Base year assigned approach volume (link) = 700

The future year forecasted volumes (F_i) for turning movements 4, 5, and 6 on approach B would then be adjusted as follows:

$$V_{ri} = F_i * (500/700) = F_i * 0.71 \text{ for } i = 4, 5, 6$$

The adjustment would be different for each intersection approach.

Note that the difference method cannot be used with base year link volumes because the total difference between actual and assigned link volumes cannot be added (or subtracted) to each individual turning movement.

ITERATIVE PROCEDURES

This section contains procedures for producing either directional or non-directional turning volumes using an iterative approach. Iteration involves applying a technique repeatedly until the results converge to an acceptable result. Both procedures derive future year turning movements from prespecified link volumes and an initial estimate of turning percentages. Iteration is required to balance the volume of traffic entering and leaving the intersection. Therefore, the number of iterations necessary to produce an acceptable set of turning volumes is dependent on the ability of the analyst to make reasonable a priori estimates of turning percentages. These estimates can be made by analyzing base year counts at the same intersection, by reviewing turning movements at similar intersections, or by examining adjacent land use intensity and distribution.

Directional Volume Method

Starting with user-estimated turning percentages, the directional volume method proceeds through an iterative computational technique to produce a final set of future year turning volumes. The computations involve alternately balancing the rows (inflows) and the columns (outflows) of a turning movement matrix until an acceptable convergence is obtained. Future year link volumes are fixed using this method and the turning movements are adjusted to match.

This procedure is most applicable in cases where the future year turning volume forecasts are not expected to be radically different from either the base year conditions or from the initial user-supplied estimates of turning percentages. If large differences occur, several iterations may be required to reach convergence to the prespecified future year link volumes. Normally, however, six to ten iterations requiring one or two person-hours should suffice.

Basis for Development

The directional volume method is based on a basic iteration technique developed by Furness (30) and modified for intersection flows by Mekky (64). A similar but more complex formulation developed by Bacharach (7) involves input-output changes using a biproportional matrix method.

Apart from these iterative techniques, there also exists a noniterative method for generating intersection directional turning movements. This method, developed by Norman et al. (43, 73), may be substituted for the iterative approach in cases where the analyst has good initial estimates of the future year turning movements. However, the mathematical complexity of the formulation, plus the probability that negative numbers may result, indicates that the iterative method described in this chapter will produce the most consistent results in a reasonable time frame.

Input Data Requirements

The following input data are required:

- Future year directional link volumes.
- Either: Base year actual or assigned directional turning movements.
  Initial estimate of future year directional turning percentages.

The future year link volumes are obtained directly from the computer forecasts or from the results of a link refinement or detailing procedure (see Chapters 4 through 7). The base year data would preferably be actual turning movement counts, but turning data from a base year assignment could also be used. In lieu of base year data, the analyst must make an initial estimate of future year turning percentages based on an examination of adjacent land uses or the turning movements at similar intersections.

Directions for Use

The directional volume method consists of five steps, as diagrammed in Figure A-60. The following notations are used in the calculations:

- n = number of links emanating from the intersection;
- O_{ib} = base year (b) inflow to the intersection on link i (i=1...R);
- O_{if} = future year (f) inflow to the intersection on link i (i=1...n);
- D_{jb} = base year (b) outflow from the intersection on link j (j=1...n);
- D_{jf} = future year (f) outflow from the intersection on link j (j=1...n);
- T_{ijb} = base year (b) traffic flow entering through link i and leaving through link j;
- T_{ijf} = future year (f) traffic flow entering through link i and leaving through link j;
- P_{ijf} = future year (f) estimated percentage (expressed in decimal form) of traffic flow from link i to link j (use in place of T_{ijb}); and
- * = represents adjusted values in each iteration.

These notations can be illustrated using the example intersection diagrammed in Figure A-61. In this case, the number of links is 4 (n=4). The base year and future year inflows O_{ib} and O_{if} are shown for each link, as are the corresponding outflows D_{jb} and D_{jf}. The base year and future year turning movements T_{ijb} and T_{ijf} are diagrammed for each of the 12 movements.

If the base year turns T_{ijb} were not known, estimated future year turn percentages (P_{ijf}) could be substituted, as illustrated for link 1. The P_{ijf} must total to 1.00 (or 100%) for each approach. Therefore, $P_{12f} + P_{13f} + P_{14f} = 1.00$ and so forth for each approach link.

The computational steps are described below, followed by an example.

Step 1--Construct Initial Turning Movement Matrix. The first step involves constructing an initial matrix of turning movements to be used in the iterations. The construction varies depending on whether or not base year turning volumes are available. In these and subsequent matrices, the diagonal elements (i=j) will always be equal to zero unless U-turns are permitted.

Step 1A--Base Year Turning Volumes Known. First construct a turning movement matrix of base year turning volumes (T_{ijb}). Next, insert the row and column totals. The row totals should represent inflows (O_{ib}) and the column totals should represent outflows (O_{jb}). This is shown below.

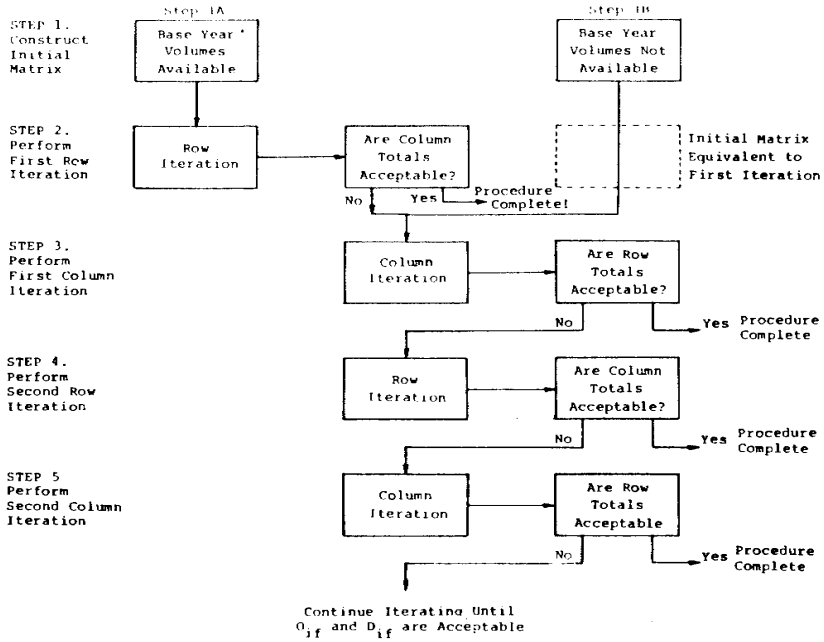


Figure A-60. Iterative procedure to compute directional turning volumes.

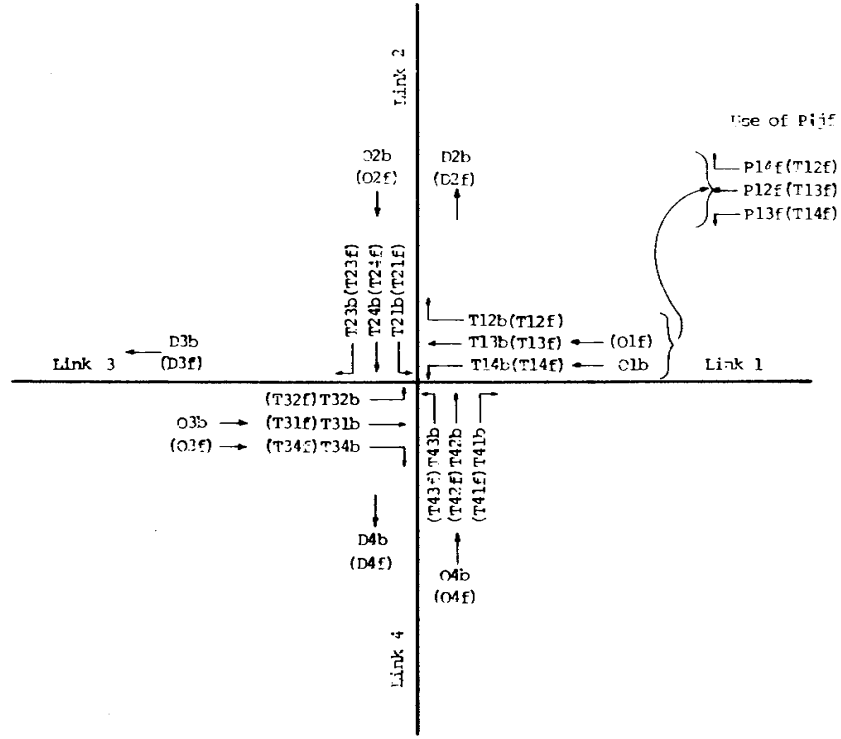


Figure A-61. Intersection notation used for directional iterative procedure.

```
                Columns
              -Out flows-
              Dib(Dif)
            |  x    x    x    x
Rows        |
-Inflows-   |  x      Tijb      x
(Oi)Oib     |  x                x
            |  x    x    x    x
```

Base Year Turn Movements

The sum of the T_{ijb} across each row and down each column should be equal to the O_{ib} and D_{jb} respectively.

Finally, display the future year link volume inflows (O_{if}) and outflows (D_{jf}) in parentheses adjacent to the corresponding base year link volumes. Proceed to Step 2.

If base year turning volumes are not known, omit this step and proceed to Step 1B.

Step 1B--Base Year Turning Volumes Not Known. Construct an initial future year turning movement matrix using estimated turn percentages. The row totals should represent the future year assigned inflows (O_{if}). The column totals should represent outflows (D_{jf}). The individual turning movements (i.e., cells of the matrix) are calculated as follows:

$$T_{ijf}^* = O_{if} * P_{ijf} \qquad \text{(A-30)}$$

Note that the P_{ijf} are applied to the inflows (O_{if}), not to the outflows (D_{jf}). This computation is repeated for each cell of the matrix.

To aid in this computation, it is often helpful to construct a separate matrix of estimated turning percentages, as shown below. Matrix multiplication can then be performed.

```
                Column Totals
                Not Usually
                Equal to 1.00
        |  x    x    x    x
1.00    |  x      Pijf      x
1.00    |  x                x
1.00    |  x    x    x    x
```

The row totals must equal 1.00. Except by coincidence, the column totals of P_{ijf} will not equal 1.00.

At this point the inflows (O_{if}) are equal to the desired future year assigned link volumes. The adjusted outflows (D_{jf}^*), on the other hand, must be calculated as the sum of all traffic volumes (T_{ijf}^*) for the appropriate column (j). For instance, for link 2, D_{jf}^* would equal the sum of all traffic turning onto Link 2 (e.g., $T_{12f}^* + T_{32f}^* + T_{42f}^* = D_{2f}^*$ for a four-legged intersection with no U-turns).

$$D_{jf}^* = \sum_{i=1}^{N} T_{ijf}^* \qquad \text{(A-31)}$$

Except in rare cases, this value of D_{jf}^* will not equal the desired future year outflow D_{jf}. Therefore, iterations will be required to enable the D_{jf}^* to converge onto the desired D_{jf} value. If the difference between these values is acceptable to the analyst, the procedure is complete. Typically, a difference of ± 10 percent is considered to be acceptable. The matrix at this stage is shown below.

```
          Djf*
        |  x    x    x    x
        |  x                x
Oif     |  x    Tijf*       x
        |  x                x
        |  x    x    x    x
```

Step 1B actually represents the first row iteration of the procedure, although derived in a slightly different fashion from the case where base year volumes are known. Therefore, if further iterations are required, the analyst should now skip to Step 3. These relationships are shown in Figure A-60.

Step 2--Perform the First Row Iteration. Perform this step only after Step 1A. In the matrix replace the base year inflows (O_{ib}) with the future year inflows (O_{if}). Then adjust each individual turning movement according to the following:

$$T_{ijf}^* = (O_{if}/O_{ib}) \times T_{ijb} \qquad \text{(A-32)}$$

where T_{ijf}^* is the adjusted future volume for this iteration.

Construct a new matrix consisting of the T_{ijf*} and O_{if}. Now calculate the new D_{jf}^* by summing the T_{ijf}^* in each column j.

$$D_{jf}^* = \sum_{i=1}^{N} T_{ijf}^* \qquad \text{(A-33)}$$

The matrix at this stage is shown below.

```
          Djf*
        |  x    x    x    x
        |  x                x
Oif     |  x    Tijf*       x
        |  x                x
        |  x    x    x    x
```

The D_{jf}^* should be compared with the desired D_{jf} from Step 1A. If the difference between these values is acceptable to the analyst, then the procedure is complete. Typically, a difference of ± 10 percent is considered to be acceptable. If a larger discrepancy is apparent, then a further iteration(s) is required.

Step 3--Perform the First Column Iteration. This step is performed on the adjusted turning movement matrix from Steps 2 or 1B. Replace the outflows (D_{jf*}) with the original D_{jf}. Adjust

each individual movement according to the following:

$$T_{ijf}{*}NEW = (D_{jf}/D_{jf}{*})\, T_{ijf}{*}OLD \qquad \text{(A-34)}$$

where:

$T_{ijf}{*}OLD$ = $T_{ijf}{*}$ value in the matrix developed in Steps 2 or 1B; and

$T_{ijf}{*}NEW$ = Adjusted T_{ijf} after column iteration.

In subsequent iterations, $T_{ijf}{*}NEW$ becomes $T_{ijf}{*}OLD$ and so forth.

Construct a new matrix consisting of the $T_{ijf}{*}NEW$ and D_{jf}. Calculate the adjusted $O_{if}{*}$ by summing the $T_{ijf}{*}NEW$ in each row.

$$O_{if}{*} = \sum_{j=1}^{N} T_{ijf}{*}NEW \qquad \text{(A-35)}$$

The $O_{if}{*}$ should be compared with the original O_{if}. If the difference between these values is acceptable to the analyst, the procedure is complete. Typically, a value of $\pm$ 10 percent is considered to be acceptable. If a larger discrepancy is apparent, continue with a further iteration(s).

Step 4--Repeat Row Iteration. If needed, repeat the Step 2 procedure for row iterations. Calculate new values for $T_{ijf}{*}NEW$ and $D_{jf}{*}$. Compare $D_{jf}{*}$ with D_{jf}.

Step 5--Repeat Column Iteration. If needed after Step 4, repeat the Step 3 column iteration procedure. Calculate new values for $T_{ijf}{*}NEW$ and $O_{if}{*}$. Compare $O_{if}{*}$ with O_{if}.

The row and column iterations should be continued until acceptable values of $O_{if}{*}$ and $D_{jf}{*}$ are obtained. The $T_{ijf}{*}$ values in the final iteration matrix will represent the final adjusted directional turning and through movements. The $T_{ijf}{*}$ should be closely reviewed for reasonableness before using them in subsequent planning and design studies.

Example

Step 1A A four-link intersection has base year turning movements and future year link volumes as illustrated in Figure A-62 and displayed in matrix form in Figure A-63. For this example, Step 1B is not used, and the analysis moves to Step 2.

Step 2: First Row Iteration (Fig. A-64)

Step 3: First Column Iteration (Fig. A-65)

In this example, the differences in row totals are within 5 percent after the second iteration. If this difference is acceptable, select the $T_{ijf}{*}NEW$ from Step 3 as the final turning movement matrix, and subsequent iterations will not be required.

For comparison, after six iterations, the results in Figure A-66 could be obtained. Therefore, the additional iterations have reduced the differences further still.

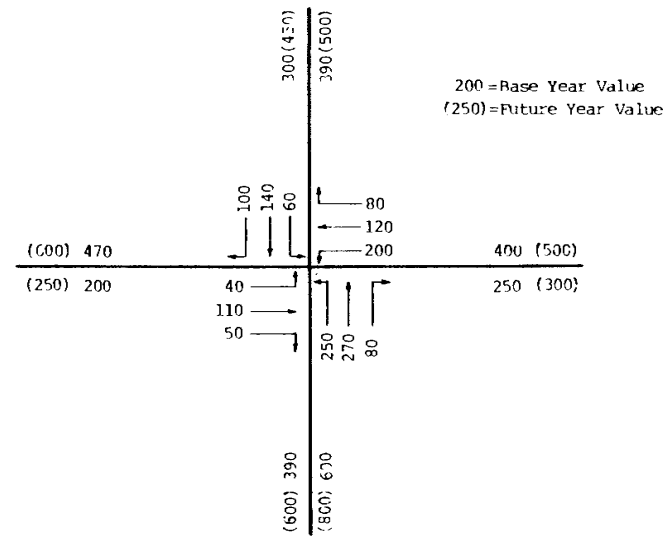


Figure A-62. Example of directional intersection volumes.

		(300) 250	(500) 390	(600) 470	(600) 390	(D_{jf}) D_{jb} Out-flows
(500)	400	0	80	120	200	T_{ijb}
(450)	300	60	0	100	140	
(250)	200	110	40	0	50	
(800)	600	80	270	250	0	
(O_{if})	O_{ib}					
Inflows						

Figure A-63. Intersection volumes displayed in matrix format.

O_{if} \ D_{jf}^*	335	510	633	522
500	0	100	150	250
450	90	0	150	210
250	138	50	0	62
800	107	360	333	0

$$D_{jf}^* = \sum_{i=1}^{4} T_{ijf}^*$$

$$T_{ijf}^* = \frac{O_{if}}{O_{ib}} \times T_{ijf}$$

Compare	D_{jf}^*	≈	D_{jf}	Δ
j = 1	335		300	+12 %
j = 2	510		500	+ 2 %
j = 3	633		600	+ 6 %
j = 4	522		600	- 13 %
Total	2000		2000 ✓	

Figure A-64. First row iteration.

O_{if}^* \ D_{jf}	300	500	600	600
527	0	98	142	287
464	81	0	142	241
244	123	49	0	72
765	96	353	316	0

$$T_{ijf}^{*NEW} = \frac{D_{jf}}{D_{jf}^*} \times T_{ijf}^{*OLD}$$

Compare	O_{if}^*	≈	O_{if}	Δ
i = 1	527		500	+5 %
i = 2	464		450	+3 %
i = 3	244		250	-2 %
i = 4	765		800	-4 %
	2000		2000 ✓	

Figure A-65. First column iteration.

O_{if}^* \ D_{jf}	300	500	600	600
502	0	89	132	281
453	76	0	135	242
250	124	49	0	77
795	100	362	333	0

$$T_{ijf}^{*NEW} = \frac{D_{jf}}{D_{jf}^*} \times T_{ijf}^{*OLD}$$

Compare	O_{if}^*	≈	O_{if}	Δ
i = 1	502		500	0 %
i = 2	453		450	+1 %
i = 3	250		250	0 %
i = 4	795		800	-1 %
	2000		2000 ✓	

Figure A-66. Intersection volumes after 6 iterations.

Nondirectional Volume Method

The nondirectional volume method produces two-way turning volumes at an intersection given two-way link volumes and an estimate of the total vehicle turning percentage. The basic assumption used is that the volume of traffic on a given approach of an intersection is a surrogate for land-use attractions and production downstream. Turning movements at an intersection should therefore be some function of the attractions and productions each direction of travel offers.

The method provides a five-step sequence and may have to be performed iteratively to achieve a balanced distribution of turns and through movements. The number of iterations required will vary between intersections, depending on the number of intersection approaches and the volume of turns. Usually three to four iterations requiring one to three person-hours will be sufficient.

Basis for Development

This nondirectional volume method is adapted from an unpublished technique developed by Marshment at the Middle Rio Grande Council of Governments (63). It originally evolved through combining empirical analyses of actual intersection operations with local knowledge of characteristics specific to the intersection being studied. As such, there is no theoretical basis for the method, and there is no uniqiue solution. Rather the method produces a reasonable turning movement scenario using the assumptions described above.

Because of its sketch-planning nature, the method relies heavily on the judgment of the analyst to select reasonable total turn percentages and to make manual adjustments to the volumes after completion of the basic computations. However, its straightforward formulation provides a logical tool with which to analyze basic intersection turning movements in situations where only link volumes are known.

Input Data Requirements

Nondirectional link volumes (i.e., total both directions) on each approach are required input data for this method. The nondirectional link volumes are obtained directly from the computer assignment or from the results of link refinement or detailing procedures described in Chapters 4 through 7.

Directions for Use

The five-step methodology is described below, along with an illustrative example.

Step 1--Estimate Total Turning Percentage. The first step is to estimate the percentage of total inflowing traffic which turns (either right or left). The turning percentage value must normally be estimated based on the unique characteristics of the intersection and comparable intersections from other parts of the urban area. If the actual signal green time given to individual turning movements is known at the subject intersection, these values can be used instead of the estimated percentage for the entire intersection.

This turning movement percentage is estimated relative to the sum of only inflowing (i.e., one direction) volume. The inflowing volume equals one-half of the total nondirectional volume. Therefore, a turn percentage relative to the total non-directional volume would need to be doubled.

For example, Figure A-67 depicts a four-way intersection with nondirectional link volumes.

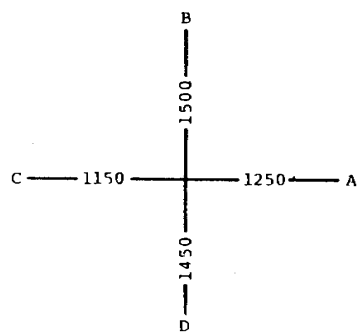


Figure A-67. Example of nondirectional intersection volumes.

The sum of the nondirectional link volumes is 1,250 + 1,500 + 1,150 + 1,450 = 5,350. Therefore, the total inflowing (equals outflowing) volume is 5,350/2 = 2,675. It is assumed on the basis of conditions at similar intersections that the total turn percentage would not exceed 20 percent of the inflowing traffic, or 0.20 * 2,675 = 535 turning vehicles. This value of 535 would equal the sum of all inflowing left turn and right turn volumes (V_{turns}). Because the 2,675 total represents the total inflowing volume, Eq. A-36 can be used to calculate total through volume ($V_{through}$):

$$V_{Turns} + V_{Through} = 2{,}675 \qquad \text{(A-36)}$$

Substituting for the turning volume yields:

$V_{Through}$ = 2,675 - 535 = 2,140 (sum of all approaches)

$V_{Through}$ can be checked for reasonableness against volumes on similar approaches with known directional link volumes.

Step 2--Calculate the Relative Weight of Each Intersection Approach. This step is best accomplished graphically. Draw a generalized schematic of the intersection. Sum all the nondirectional volumes on all the intersection approaches. Express the volume on a particular approach as a proportion of total volume. The proportions (or relative weights) on all approaches must sum to 1.00 (100%).

Using the example in Figure A-67, the relative weights for approaches A through D would be as follows:

Total Nondirectional Volumes = 5,350 (from Step 1)

Approach A: 1,250/5,350 = 0.23
Approach B: 1,500/5,350 = 0.28
Approach C: 1,150/5,350 = 0.22
Approach D: 1,450/5,350 = 0.27
1.00

Step 3--Perform Initial Allocation of Turns. This step involves allocating the volume on each approach to the other intersection approaches. Multiply the total volume on an approach by the relative weights, as computed in Step 2 for the remaining approaches which involve turns. Straight-through volumes are not allocated at this time. This calculation should be performed for each intersection approach to produce turns to the other approaches. For this methodology, U-turns are assumed to be negligible and are not included. Continuing with the example, the following calculations would be made:

From Approach	To Approach	
A	B	1,250 * 0.28 = 350
	D	1,250 * 0.27 = 338
B	A	1,500 * 0.23 = 345
	C	1,500 * 0.22 = 330
C	B	1,150 * 0.28 = 310
	D	1,150 * 0.27 = 310
D	A	1,450 * 0.23 = 334
	C	1,450 * 0.22 = 319

At this point there will be two sets of two-way turn volumes for each interchange opportunity (e.g. A to B; B to A). To avoid double-counting, each pair of turn volumes for each potential turn should be averaged to produce one nondirectional turn volume for each potential interchange. These values will be further refined in subsequent steps. Figure A-68 shows this averaging calculation.

Step 4--Adjust Turning Volumes Based on Total Turning Percentage. The total volume of turns generated in Step 3 will typically exceed the likely volume of turns at the intersection. To adjust the Step 3 estimates, a turning percentage adjustment needs to be imposed. The adjustment involves the following computations:

(a) Write down the total inflowing volume (Step 1).

(b) Write down the total turn percentage (Step 1).

(c) Compute total expected volume of turns as (a) * (b).

(d) Sum the turning volumes calculated during Step 3.

(e) Adjust the individual turns from Step 3 using either a difference or a ratio method. For the difference method, subtract (d) from (c) to determine the total turn volume discrepancy. Divide this difference by the number of turning movements (e.g., for a four approach intersection there are four turning movements) and add/subtract to/from the turning movements. For the ratio method, divide (c) by (d) and multiply this value times each of the turning movements. Both of these methods produce satisfactory results in most cases; however, the difference method may result in negative numbers if the total estimated intersection turning percentage (Step 1) is too low.

At the end of this step, the total volume of turns at the intersection will be equal to the expected volume total from Step 1.

Using the example:

(a) Total inflowing volume = 2,675

(b) Total turn percentage = 20% (0.20)

(c) Total expected volume of turns = 2,675 * 0.20 = 535

(d) Sum of turns from Step 3 = 348 + 320 + 315 + 336 = 1,319

(e) Adjustment:

Difference Method: 535 - 1,319 = -784 - 84/4 = 196 to be subtracted from each turning volumes

Ratio Method: 35/1,319 = 0.41 to be multiplied by each turning volumes

Since no negative numbers would result in this example, the difference method is selected. The result is shown in Figure A-69.

Step 5--Balance the Approach Volumes and Adjusted Turn Volumes. Typically the preceding steps will yield a turning movement estimate that conforms to the estimated turning percentage established in Step 1. However, it is possible, even likely, that the method will not yield an intersection scenario that accounts for all traffic traversing the intersection. To test for this situation, take each approach of the intersection and do the following:

(a) Write down the total approach volume

(b) Subtract the turns made to/from that approach from cross streets

(c) Add the turns made to/from the approach on the opposite side of the intersection.

This computation should be performed independently for each intersection approach. If the intersection clears all traffic, the total volume on the opposing approach of the intersection should equal the volume estimated from the above test. If these volumes do not correspond, an adjustment needs to be made to out-of-balance numbers to bring the analysis into equilibrium, and thus to account for all of the intersection volume. The adjustment technique is not routine, but needs to be tailored to the specific results of the test.

In this example, the following calculations are performed for approach A:

Approach A: (a) 1,250

(b) 1,250 - 152 - 140 = 958

(c) 958 + 124 + 119 = 1,201 (compared with Approach C volume = 1,150)

Similar calculations are performed for the other approaches with the results shown in Figure A-70. It can be seen that the calculations yielded fairly close in agreement in this case. Comparing opposite approaches, Approaches A and C are under/overestimated by 51 respectively, while B and D are under/overestimated by 33 respectively.

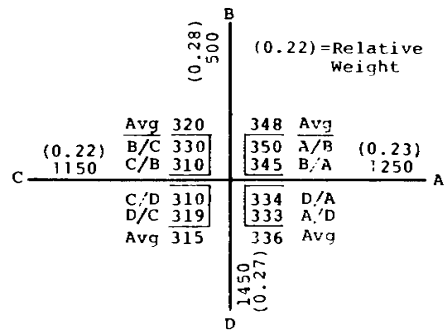


Figure A-68. Averaging of nondirectional turning volumes.

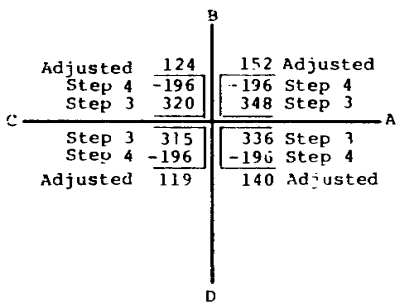


Figure A-69. Adjusted nondirectional turning volumes.

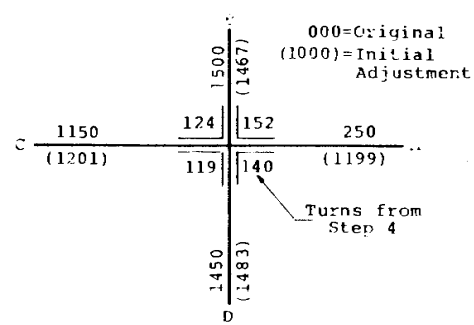


Figure A-70. Results of test for intersection volume clearance.

Two situations are normally encountered in this analysis:

1. The opposite intersection approaches show a greater difference in adjusted volume (Step 5) than was evident in the original volumes (Step 2).

2. The two opposing intersection approaches have adjusted volumes (Step 5) that are closer to each other than was evident in the original volumes (Step 2).

In the first situation, iterating the entire procedure from Step 2 using the new approach volumes will narrow the volume differences between two opposing intersection approaches. The nature of the procedure tends to reduce differences. Thus, when working with intersections with dramatically different volumes on each approach, the procedure will reduce the differences on opposing approaches, and if subjected to enough iterations, will ultimately yield the average of the two volumes on each opposing approach.

The second situation, in which the difference in volume on opposing approaches needs to be increased, is more complicated. The volumes in this example typify this discrepancy, as shown below:

	Original Volume Difference (Step 2)	Adjusted Volume Difference (Step 5)	Conclusion
Approaches A/C	1,250-1,150 = 100	1,201-1,199 = 2	Increase Difference
Approaches B/D	1,500-1,450 = 50	1,483-1,467 = 16	Increase Difference

This difference needs to be apportioned between the two approach volumes, keeping the turning volumes constant. The following computations will provide an adjustment on the first iteration which will increase the difference between the opposing volumes.

(a) Sum the volumes on the two opposing approaches using the original volumes input at the outset of the analysis (Step 2).

(b) Determine the proportion of this volume (a) represented by each of the two opposing approaches. This must sum to 1.00 (100%).

(c) Determine the approach volume difference between the adjusted (Step 5) and the original estimates. This absolute difference should be the same on each side of the intersection, although the sign will change.

(d) Multiply the proportions (b) by the volume difference (c). Add/subtract this number to/from the calculated volumes as appropriate.

The above adjustments should be applied to each intersection approach in order to ensure that the approach volumes are in scale relative to the completed turning volumes. Note that unless the proportions determined from (b) are split 50%-50%, then (d) will result in a change in the sum of the opposing approach volumes (a) and also of the total intersection volume.

These calculations are shown below for the example:

	Approaches A/C	Approaches B/D
(a)	1,250 + 1,150 = 2,400	1,500 + 1,450 = 2,950
(b)	A: 1,250/2,400 = 0.52	B: 1,500/2,950 = 0.51
	C: 1,150/2,400 = 0.48	D: 1,450/2,950 = 0.49
(c)	A: 1,250 - 1,199 = +51	B: 1,500 - 1,467 = +33
or	C: 1,150 - 1,201 = -51	or D: 1,450 - 1,483 = -33
(d)	A: 0.52 * 51 = 27 (Add)	B: 0.51 * 33 = 17 (Add)
	C: 0.48 * 51 = 24 (Subtract)	D: 0.49 * 33 = 14 (Subtract)

The final nondirectional intersection volumes are shown in Figure A-71.

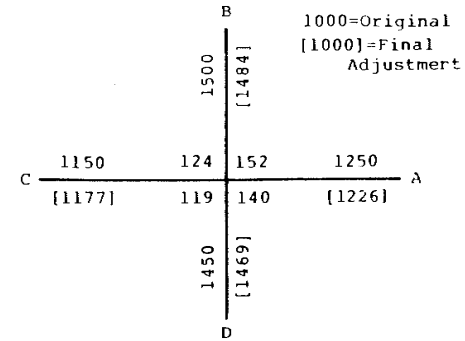


Figure A-71. Final nondirectional intersection volumes.

As a check, the total adjusted intersection volume is calculated to be 1,226 + 1,484 + 1,177 + 1,469 = 5,356, which is slightly higher than the original total of 5,350. This difference is not significant; however, in other examples additional manual link and/or turn adjustments may be required to ensure that the total intersection volume remains within a range acceptable to the analyst.

Special Situations

This method is intended for sketch planning purposes to determine the approximate nondirectional movements at an intersection. The method can also be applied with care to directional volumes, although the added complexity of this situation often leads to a time-consuming process. Therefore, directional volumes are better estimated using the preceeding iterative method.

Several applications of the method require special attention. At an intersection with five or more approaches, the approaches may have to be broken down into two or three partial intersections and then remerged to manually combine the results. This involves considerable judgment. Another difficult situation occurs when one of the intersection approaches is a one-way street. In such a situation two-way trip interchanges cannot occur. To treat this problem, the intersection must be broken into a set of one-way streets. One street would carry the flow into the intersection, and all of the other approaches would carry flow away from the intersection. At this point, the method proceeds as usual from Step 1 for each "set" of one-way streets. After all movements have been accounted for, the results should be merged and adjusted to ensure that all traffic can clear the intersection (Step 5).

A very common difficulty encountered with this method occurs where the intersection approaches carry radically different volumes. For example, a residential collector carrying a volume of 6,000 may cross a large principal arterial carrying 35,000 or more. Since the method tends to reduce the differences between link volumes on adjacent approaches the analyst in this situation will frequently be confronted with the need to increase the differences in volumes.

The method can be made to work with different turning movement percentages for different approach directions. An analyst familiar with local conditions can invoke this feature with good results. When signal green times for particular turning movements are available, these should be used instead of a total percentage for all turns (Step 1). In such cases, Step 4 can be modified to adjust each turning movement independently using the difference or ratio method. These results are then merged to produce a total intersection flow diagram for input to Step 5.

"T" INTERSECTION PROCEDURES

The turning movements on a three-legged, or "T" intersection can often be determined using simpler procedures. A unique solution can be obtained for nondirectional turning movements. Directional turning volumes can be directly computed from directional link volumes if only one intersection movement is available. Basic mathematical relationships among the link volumes can aid in estimating one of the turning movements for input to these computations.

Nondirectional Turning Movement Method

Nondirectional turn volumes can be easily computed if nondirectional link volumes on the three approaches are known. Note that directional link volumes must be summed together prior to application of the procedure.

Basis for Development

The nondirectional method is mathematically based on algebraic relationships. The two unknown turning volumes can be directly obtained from two independent equations. Therefore the solution is unique.

Input Data Requirements

Input data required for this method are nondirectional link volumes for each of the three approaches. These volumes can be obtained directly from the computer assignment or from the results of the refinement or detailing procedures presented in Chapters 4 through 7.

Directions for Use

Referring to Figure A-72 for notations, the following equations are used:

$$X = (A - B + C)/2 \qquad \text{(A-37)}$$

$$Y = (C - A + B)/2 \qquad \text{(A-38)}$$

Where A, B and C are link volumes and X and Y are the desired turning movements:

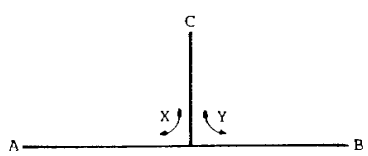


Figure A-72. "T" intersection with nondirectional turning movements.

For example, given the following link volumes:

A = 10,000

B = 12,000

C = 4,000

Then:

X = (10,000 - 12,000 + 4,000)/2 = 1,000

Y = (4,000 - 10,000 + 12,000)/2 = 3,000

As a check, the sum of X+Y must equal link volume C. Therefore, 1,000 + 3,000 = 4,000 = C (Check). Care must be taken to denote the movements as shown above. Otherwise, Eqs. A-37 and A-38 would require adjustment.

Directional Turning Movement Method

Directional volumes at "T" intersections cannot be uniquely determined from directional link volumes alone. However, knowledge of one directional volume will produce a unique solution for all other directional volumes.

Basis for Development

Because a "T" intersection has only six directional movements involved, simple mathematics can be used to derive equations to aid in the solution. A total of five independent equations are available to solve for six unknown volumes. Therefore, one movement must be known or estimated before the other five movements can be calculated. Some basic mathematical relationships can also be made among the six directional link volumes. These relationships can assist in estimating one of the turning volumes, from which the others can be directly computed as discussed above.

Input Data Requirements

Six directional link volumes are required for input to this method. In addition, one of the six turning volumes must be known or estimated.

The link volumes can be obtained from a directional computer assignment or from the results of a refinement or detailing procedure described in Chapters 4 through 7. The procedures in Chapter 10 can be used to derive directional link volumes from nondirectional link volumes. The one turning volume can be estimated from base year counts, turning volumes at similar intersections, or from known relationships among the link volumes. This latter source is described below.

Directions for Use

If one turning volume or one through movement is known or can be estimated, the analyst can calculate the remaining volumes. Five independent equations can be constructed. Figure A-73 shows a typical situation with unknown volumes A, B, C, D and E, while F is assumed to be known (F = 100), as are the link volumes 1 through 6. The following equations are possible:

$$E = \text{Volume } 4 - F \text{ where } F \text{ is known} \qquad \text{(A-39)}$$

$$A = \text{Volume } 5 - E \qquad \text{(A-40)}$$

$$B = \text{Volume } 2 - A \qquad \text{(A-41)}$$

$$C = \text{Volume } 3 - B \quad \text{(A-42)}$$

$$D = \text{Volume } 6 - C \quad \text{(A-43)}$$

Substituting for the link volumes and for F, the volumes A through E are calculated sequentially as follows:

$$E = 400 - (100) = 300$$

Then:

$$A = 1000 - (300) = 700$$

$$B = 800 - (700) = 100$$

$$C = 300 - (100) = 200$$

$$D = 1200 - (200) = 1000$$

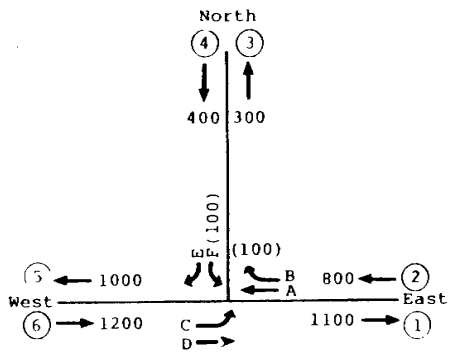


Figure A-73. "T" intersection with directional turning movements.

Other similar computations with different number pairs would produce the same unique results.

In most cases, the analyst will know or be able to estimate one of these directional movements. Straight-through movements are usually quite apparent from the directional link volumes. In the example in Figure A-73, the through volumes A and D would be expected to represent a high proportion of their respective approach volumes given the continuity of directional link volumes on both sides of the intersection (e.g., the link volumes on the west and east approaches are similar), and given the relatively small link volumes on the north approach. In cases where the cross street link volumes (e.g., on north approach) are high relative to the main street link volumes (e.g., on west and east approaches), then lower through volumes (e.g., movements A and D) would be expected. Once these relationships are established, one of the directional volumes can usually be estimated.

Another technique is to first compute the nondirectional turning volumes using the method described previously. Using Figure A-73, the nondirectional turning volumes will equal the sum of directional volumes (C + E) and (B + F). The task is then to determine each of these directional volumes, plus the through volumes A and D given the nondirectional turning volumes and the directional link volumes, which are known.

Some basic relationships can be established using the directional link volumes. For instance, as shown in Figure A-73, if link volume (1) is greater than (6), turning movement F must be greater than C. Similarly, if (5) is greater than (2), E must be greater than B. Finally, if (3) is greater than (4), (B + C) must be greater than (E + F). Because the link volumes 1 through 6 are known, the magnitudes of these inequalities are also known. The converse of these relationships is also true. Given this knowledge, the analyst can usually estimate at least a range for each of the turning volumes. Once a single turning volume is estimated within a tolerable range, the remaining directional volumes can then be computed directly as described previously.

Some of the above relationships can also be developed for four or five-legged intersections where specified movements (e.g., left turns) are prohibited. However, the added complexity of multi-leg intersections usually prevents the analyst from constructing meaningful mathematical relationships within a reasonable timeframe.

APPENDIX E

- Synchro Analysis Worksheets

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	54	965	1928	141	94	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.93	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	3503		1692	1504
Flt Permitted	0.95	1.00	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	3503		1692	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	1049	2096	153	102	253
RTOR Reduction (vph)	0	0	5	0	33	70
Lane Group Flow (vph)	59	1049	2244	0	150	102
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	3.1	64.7	57.6		12.0	12.0
Effective Green, g (s)	3.1	64.7	57.6		12.0	12.0
Actuated g/C Ratio	0.04	0.76	0.68		0.14	0.14
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	64	2703	2382		239	213
v/s Ratio Prot	c0.03	0.30	c0.64		c0.09	
v/s Ratio Perm						0.07
v/c Ratio	0.92	0.39	0.94		0.63	0.48
Uniform Delay, d1	40.7	3.4	12.1		34.2	33.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	84.8	0.1	8.4		5.0	1.7
Delay (s)	125.5	3.4	20.4		39.3	35.1
Level of Service	F	A	C		D	D
Approach Delay (s)		9.9	20.4		37.3	
Approach LOS		A	C		D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1003	63	440	1770	13	203	5	519	3	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1689	1583	1681	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1689	1583	1681	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1090	68	478	1924	14	221	5	564	3	3	0
RTOR Reduction (vph)	0	0	41	0	0	6	0	0	237	0	0	0
Lane Group Flow (vph)	5	1090	27	478	1924	8	113	113	327	3	3	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.9	27.9	27.9	15.8	42.8	42.8	10.3	10.3	26.1	0.9	0.9	
Effective Green, g (s)	0.9	27.9	27.9	15.8	42.8	42.8	10.3	10.3	26.1	0.9	0.9	
Actuated g/C Ratio	0.01	0.39	0.39	0.22	0.60	0.60	0.15	0.15	0.37	0.01	0.01	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	43	2001	622	765	3069	955	244	245	672	21	22	
v/s Ratio Prot	0.00	0.21		c0.14	c0.38		0.07	0.07	c0.11	c0.00	0.00	
v/s Ratio Perm			0.02			0.01			0.10			
v/c Ratio	0.12	0.54	0.04	0.62	0.63	0.01	0.46	0.46	0.49	0.14	0.14	
Uniform Delay, d1	34.6	16.6	13.3	24.9	9.0	5.6	27.8	27.8	17.2	34.6	34.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.3	0.0	1.6	0.4	0.0	1.4	1.4	0.6	3.1	2.8	
Delay (s)	35.8	16.9	13.3	26.5	9.4	5.6	29.2	29.1	17.8	37.7	37.4	
Level of Service	D	B	B	C	A	A	C	C	B	D	D	
Approach Delay (s)		16.8			12.7			21.0			37.6	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

SR 94 Improvement Project
3: SR 94 (Campo Rd) & Jamacha Rd.

Existing Weekday Baseline
Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	943	518	93	1208	10	974	33	153	5	9	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	1025	563	101	1313	11	1059	36	166	5	10	39
RTOR Reduction (vph)	0	0	173	0	0	7	0	0	95	0	0	37
Lane Group Flow (vph)	77	1025	390	101	1313	4	1059	36	71	5	10	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	4.0	24.5	53.2	4.0	24.5	24.5	28.7	28.7	32.7	3.6	3.6	3.6
Effective Green, g (s)	4.0	24.5	53.2	4.0	24.5	24.5	28.7	28.7	32.7	3.6	3.6	3.6
Actuated g/C Ratio	0.05	0.32	0.69	0.05	0.32	0.32	0.37	0.37	0.43	0.05	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	92	1622	1096	178	1622	504	1282	696	756	82	87	74
v/s Ratio Prot	c0.04	0.20	0.13	0.03	c0.26		c0.31	0.02	0.00	0.00	c0.01	
v/s Ratio Perm			0.11			0.00			0.04			0.00
v/c Ratio	0.84	0.63	0.36	0.57	0.81	0.01	0.83	0.05	0.09	0.06	0.11	0.02
Uniform Delay, d1	36.1	22.3	4.8	35.6	24.0	17.8	21.8	15.4	13.2	35.0	35.1	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.2	0.8	0.2	4.1	3.1	0.0	4.5	0.0	0.1	0.3	0.6	0.1
Delay (s)	81.3	23.1	5.0	39.7	27.1	17.9	26.3	15.4	13.2	35.3	35.7	35.1
Level of Service	F	C	A	D	C	B	C	B	B	D	D	D
Approach Delay (s)		19.7			27.9			24.3			35.2	
Approach LOS		B			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	71.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project
4: SR 94 (Campo Rd) & Cougar Canyon Rd.

Existing Weekday Baseline
Timing Plan: AM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	302	301	738	277	116	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	328	327	802	301	126	387
RTOR Reduction (vph)	0	0	0	151	0	77
Lane Group Flow (vph)	328	327	802	151	126	310
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	7.1	39.6	28.5	28.5	9.4	16.5
Effective Green, g (s)	7.1	39.6	28.5	28.5	9.4	16.5
Actuated g/C Ratio	0.12	0.69	0.50	0.50	0.16	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	427	1294	931	791	291	569
v/s Ratio Prot	c0.10	0.18	c0.43		0.07	c0.07
v/s Ratio Perm				0.10		0.13
v/c Ratio	0.77	0.25	0.86	0.19	0.43	0.54
Uniform Delay, d1	24.2	3.2	12.5	7.9	21.4	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	0.1	8.2	0.1	1.0	1.1
Delay (s)	32.2	3.3	20.8	8.0	22.4	18.1
Level of Service	C	A	C	A	C	B
Approach Delay (s)		17.8	17.3		19.2	
Approach LOS		B	B		B	

Intersection Summary				
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	315	0	3	763	158	3	1	1	101	0	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1760			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1760			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	342	0	3	829	172	3	1	1	110	0	266
RTOR Reduction (vph)	0	0	0	0	0	52	0	1	0	0	0	231
Lane Group Flow (vph)	123	342	0	3	829	120	0	4	0	0	110	35
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	5.0	44.6		0.7	40.3	40.3		5.8			10.0	10.0
Effective Green, g (s)	5.0	44.6		0.7	40.3	40.3		5.8			10.0	10.0
Actuated g/C Ratio	0.06	0.58		0.01	0.52	0.52		0.08			0.13	0.13
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	114	1077		16	973	827		132			229	205
v/s Ratio Prot	c0.07	0.18		0.00	c0.45			c0.00			c0.06	
v/s Ratio Perm						0.08						0.02
v/c Ratio	1.08	0.32		0.19	0.85	0.15		0.03			0.48	0.17
Uniform Delay, d1	36.0	8.4		37.9	15.8	9.5		33.0			31.1	29.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	107.1	0.2		5.6	7.3	0.1		0.1			1.6	0.4
Delay (s)	143.2	8.6		43.5	23.1	9.6		33.1			32.7	30.2
Level of Service	F	A		D	C	A		C			C	C
Approach Delay (s)		44.2			20.9			33.1			31.0	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	68.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	163	254	7	7	598	1	11	1	3	3	2	353
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	177	276	8	8	650	1	12	1	3	3	2	384
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	651			284			1684	1301	280	1300	1304	651
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	651			284			1684	1301	280	1300	1304	651
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			99			0	99	100	97	98	18
cM capacity (veh/h)	935			1279			11	130	759	116	129	469

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	177	284	8	651	16	5	384
Volume Left	177	0	8	0	12	3	0
Volume Right	0	8	0	1	3	0	384
cSH	935	1700	1279	1700	15	121	469
Volume to Capacity	0.19	0.17	0.01	0.38	1.06	0.04	0.82
Queue Length 95th (ft)	17	0	0	0	63	3	195
Control Delay (s)	9.7	0.0	7.8	0.0	589.6	36.1	38.9
Lane LOS	A		A		F	E	E
Approach Delay (s)	3.7		0.1		589.6	38.9	
Approach LOS					F	E	

Intersection Summary			
Average Delay	17.4		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	194	35	2	424	53	117	33	5	44	25	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1788			1711	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.77			0.86	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1424			1491	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	211	38	2	461	58	127	36	5	48	27	73
RTOR Reduction (vph)	0	0	24	0	0	36	0	2	0	0	53	0
Lane Group Flow (vph)	15	211	14	2	461	22	0	166	0	0	95	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.5	13.1	13.1	0.5	13.1	13.1		9.7			9.7	
Effective Green, g (s)	0.5	13.1	13.1	0.5	13.1	13.1		9.7			9.7	
Actuated g/C Ratio	0.01	0.37	0.37	0.01	0.37	0.37		0.27			0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	25	691	587	25	691	587		391			409	
v/s Ratio Prot	c0.01	0.11		0.00	c0.25							
v/s Ratio Perm			0.01			0.01		c0.12			0.06	
v/c Ratio	0.60	0.31	0.02	0.08	0.67	0.04		0.42			0.23	
Uniform Delay, d1	17.3	7.9	7.0	17.2	9.3	7.1		10.5			9.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	33.2	0.3	0.0	1.4	2.4	0.0		0.7			0.3	
Delay (s)	50.5	8.1	7.1	18.5	11.7	7.1		11.3			10.2	
Level of Service	D	A	A	B	B	A		B			B	
Approach Delay (s)		10.4			11.2			11.3			10.2	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	44.2%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	4	6	459	180	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	4	7	499	196	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	713	201	207			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	713	201	207			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	396	840	1365			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	11	7	499	207
Volume Left	7	7	0	0
Volume Right	4	0	0	11
cSH	503	1365	1700	1700
Volume to Capacity	0.02	0.00	0.29	0.12
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	12.3	7.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.3	0.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 (Campo Rd) & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	0	3	0	0	1	3	434	1	11	142	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	0	3	0	0	1	3	472	1	12	154	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	664	664	160	666	669	472	166			473		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	664	664	160	666	669	472	166			473		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	100	100			99		
cM capacity (veh/h)	370	376	885	368	374	592	1412			1089		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	1	476	178
Volume Left	20	0	3	12
Volume Right	3	1	1	12
cSH	403	592	1412	1089
Volume to Capacity	0.06	0.00	0.00	0.01
Queue Length 95th (ft)	4	0	0	1
Control Delay (s)	14.5	11.1	0.1	0.7
Lane LOS	B	B	A	A
Approach Delay (s)	14.5	11.1	0.1	0.7
Approach LOS	B	B		

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		38.2%	ICU Level of Service	A
Analysis Period (min)		15		

10: SR 94 (Campo Rd) & Reservation Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	410	199	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	446	216	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	662	216	216			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	662	216	216			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	427	824	1353			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	446	216
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1353	1700
Volume to Capacity	0.00	0.00	0.13
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		24.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	26	67	334	12	16	110
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	73	363	13	17	120
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	524	370			376	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	524	370			376	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	89			99	
cM capacity (veh/h)	506	676			1182	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	101	376	17	120
Volume Left	28	0	17	0
Volume Right	73	13	0	0
cSH	618	1700	1182	1700
Volume to Capacity	0.16	0.22	0.01	0.07
Queue Length 95th (ft)	15	0	1	0
Control Delay (s)	12.0	0.0	8.1	0.0
Lane LOS	B		A	
Approach Delay (s)	12.0	0.0	1.0	
Approach LOS	B			

Intersection Summary				
Average Delay		2.2		
Intersection Capacity Utilization		30.5%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	52	68	295	140	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	57	74	321	152	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	660	191	230			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	660	191	230			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	93	94			
cM capacity (veh/h)	404	850	1337			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	84	74	321	230
Volume Left	27	74	0	0
Volume Right	57	0	0	78
cSH	1246	1337	1700	1700
Volume to Capacity	0.07	0.06	0.19	0.14
Queue Length 95th (ft)	5	4	0	0
Control Delay (s)	11.2	7.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.2	1.5		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		2.1		
Intersection Capacity Utilization		28.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	164	1929	1380	183	205	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3477		1761	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3477		1761	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	2097	1500	199	223	171
RTOR Reduction (vph)	0	0	13	0	4	125
Lane Group Flow (vph)	178	2097	1686	0	236	29
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	9.0	50.5	37.5		13.6	13.6
Effective Green, g (s)	9.0	50.5	37.5		13.6	13.6
Actuated g/C Ratio	0.12	0.70	0.52		0.19	0.19
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	220	2478	1808		332	283
v/s Ratio Prot	0.10	c0.59	c0.48		c0.13	
v/s Ratio Perm						0.02
v/c Ratio	0.81	0.85	0.93		0.71	0.10
Uniform Delay, d1	30.7	7.9	16.1		27.4	24.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	19.3	2.9	9.3		7.0	0.2
Delay (s)	50.0	10.8	25.4		34.4	24.4
Level of Service	D	B	C		C	C
Approach Delay (s)		13.9	25.4		30.5	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1976	128	545	1444	6	113	2	698	8	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1713	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1713	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2148	139	592	1570	7	123	2	759	9	2	1
RTOR Reduction (vph)	0	0	70	0	0	2	0	0	126	0	0	0
Lane Group Flow (vph)	5	2148	69	592	1570	5	63	62	633	5	6	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	66.8	66.8	38.2	103.9	103.9	10.2	10.2	48.4	2.5	2.5	2.5
Effective Green, g (s)	1.1	66.8	66.8	38.2	103.9	103.9	10.2	10.2	48.4	2.5	2.5	2.5
Actuated g/C Ratio	0.01	0.50	0.50	0.29	0.78	0.78	0.08	0.08	0.36	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	28	2540	790	980	3951	1230	128	128	620	31	32	29
v/s Ratio Prot	0.00	c0.42		0.17	0.31		0.04	0.04	c0.29	0.00	c0.00	
v/s Ratio Perm			0.04			0.00			0.11			0.00
v/c Ratio	0.18	0.85	0.09	0.60	0.40	0.00	0.49	0.48	1.02	0.16	0.19	0.03
Uniform Delay, d1	65.9	29.0	17.5	41.2	4.8	3.3	59.3	59.2	42.6	64.6	64.6	64.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	2.8	0.0	1.1	0.1	0.0	3.0	2.9	41.7	2.4	2.8	0.5
Delay (s)	68.9	31.8	17.6	42.3	4.9	3.3	62.2	62.1	84.3	67.0	67.4	64.9
Level of Service	E	C	B	D	A	A	E	E	F	E	E	E
Approach Delay (s)		31.0			15.1			81.2			67.0	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	133.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	1738	847	111	1224	25	685	26	112	29	32	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	1889	921	121	1330	27	745	28	122	32	35	86
RTOR Reduction (vph)	0	0	221	0	0	17	0	0	85	0	0	80
Lane Group Flow (vph)	123	1889	700	121	1330	10	745	28	37	32	35	6
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.0	34.2	54.3	4.0	30.2	30.2	20.1	20.1	24.1	5.8	5.8	5.8
Effective Green, g (s)	8.0	34.2	54.3	4.0	30.2	30.2	20.1	20.1	24.1	5.8	5.8	5.8
Actuated g/C Ratio	0.10	0.43	0.68	0.05	0.38	0.38	0.25	0.25	0.30	0.07	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	176	2171	1073	171	1917	596	861	467	555	128	134	114
v/s Ratio Prot	c0.07	c0.37	0.16	0.04	0.26		c0.22	0.02	0.00	0.02	c0.02	
v/s Ratio Perm			0.28			0.01			0.02			0.00
v/c Ratio	0.70	0.87	0.65	0.71	0.69	0.02	0.87	0.06	0.07	0.25	0.26	0.05
Uniform Delay, d1	34.9	20.9	7.5	37.5	21.0	15.6	28.7	22.8	20.0	35.1	35.1	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.5	4.1	1.4	12.6	1.1	0.0	9.1	0.1	0.1	1.0	1.0	0.2
Delay (s)	46.4	25.0	8.9	50.0	22.2	15.7	37.8	22.9	20.0	36.1	36.2	34.8
Level of Service	D	C	A	D	C	B	D	C	C	D	D	C
Approach Delay (s)		20.9			24.3			34.9			35.4	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	73.1%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	84	861	425	46	67	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	936	462	50	73	118
RTOR Reduction (vph)	0	0	0	27	0	87
Lane Group Flow (vph)	91	936	462	23	73	31
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	3.8	28.1	20.3	20.3	7.6	11.4
Effective Green, g (s)	3.8	28.1	20.3	20.3	7.6	11.4
Actuated g/C Ratio	0.09	0.64	0.46	0.46	0.17	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	298	1197	865	735	307	557
v/s Ratio Prot	0.03	c0.50	0.25		c0.04	0.00
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.31	0.78	0.53	0.03	0.24	0.06
Uniform Delay, d1	18.7	5.6	8.3	6.4	15.6	12.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	3.4	0.6	0.0	0.4	0.0
Delay (s)	19.3	9.0	9.0	6.4	16.0	12.2
Level of Service	B	A	A	A	B	B
Approach Delay (s)		9.9	8.7		13.6	
Approach LOS		A	A		B	

Intersection Summary				
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	43.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	55.7%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	783	1	5	343	106	1	3	18	230	5	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1862		1770	1863	1583		1650			1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1862		1770	1863	1583		1650			1776	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	851	1	5	373	115	1	3	20	250	5	112
RTOR Reduction (vph)	0	0	0	0	0	68	0	18	0	0	0	90
Lane Group Flow (vph)	115	852	0	5	373	47	0	6	0	0	255	22
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.2	38.2		0.7	30.7	30.7		6.1			14.6	14.6
Effective Green, g (s)	8.2	38.2		0.7	30.7	30.7		6.1			14.6	14.6
Actuated g/C Ratio	0.11	0.51		0.01	0.41	0.41		0.08			0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	191	940		16	756	642		133			342	305
v/s Ratio Prot	c0.06	c0.46		0.00	0.20			c0.00			c0.14	
v/s Ratio Perm						0.03						0.01
v/c Ratio	0.60	0.91		0.31	0.49	0.07		0.04			0.75	0.07
Uniform Delay, d1	32.1	17.1		37.2	16.7	13.7		32.1			28.7	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	5.3	12.1		10.9	0.5	0.0		0.1			8.6	0.1
Delay (s)	37.4	29.2		48.1	17.2	13.8		32.2			37.3	25.1
Level of Service	D	C		D	B	B		C			D	C
Approach Delay (s)		30.1			16.7			32.2			33.6	
Approach LOS		C			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	74.3%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	331	647	14	3	284	3	6	1	3	3	1	189
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	360	703	15	3	309	3	7	1	3	3	1	205
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	312			718			1952	1749	711	1743	1755	310
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	312			718			1952	1749	711	1743	1755	310
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	71			100			75	98	99	94	98	72
cM capacity (veh/h)	1248			883			27	61	433	51	60	730

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	360	718	3	312	11	4	205
Volume Left	360	0	3	0	7	3	0
Volume Right	0	15	0	3	3	0	205
cSH	1248	1700	883	1700	40	53	730
Volume to Capacity	0.29	0.42	0.00	0.18	0.27	0.08	0.28
Queue Length 95th (ft)	30	0	0	0	22	6	29
Control Delay (s)	9.0	0.0	9.1	0.0	125.3	78.3	11.9
Lane LOS	A		A		F	F	B
Approach Delay (s)	3.0		0.1		125.3	13.2	
Approach LOS					F	B	

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	473	121	3	198	26	69	38	22	53	25	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1772			1762	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.78			0.78	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1417			1420	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	514	132	3	215	28	75	41	24	58	27	23
RTOR Reduction (vph)	0	0	65	0	0	17	0	17	0	0	17	0
Lane Group Flow (vph)	29	514	67	3	215	11	0	123	0	0	91	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.5	14.1	14.1	0.5	14.1	14.1		8.4			8.4	
Effective Green, g (s)	0.5	14.1	14.1	0.5	14.1	14.1		8.4			8.4	
Actuated g/C Ratio	0.01	0.40	0.40	0.01	0.40	0.40		0.24			0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	25	750	637	25	750	637		340			340	
v/s Ratio Prot	c0.02	c0.28		0.00	0.12							
v/s Ratio Perm			0.04			0.01		c0.09			0.06	
v/c Ratio	1.16	0.69	0.11	0.12	0.29	0.02		0.36			0.27	
Uniform Delay, d1	17.2	8.6	6.5	17.0	7.1	6.3		11.1			10.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	233.2	2.6	0.1	2.1	0.2	0.0		0.7			0.4	
Delay (s)	250.4	11.2	6.6	19.2	7.3	6.3		11.7			11.2	
Level of Service	F	B	A	B	A	A		B			B	
Approach Delay (s)		20.6			7.3			11.7			11.2	
Approach LOS		C			A			B			B	

Intersection Summary				
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	40.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	27	4	204	501	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	29	4	222	545	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	790	560	575			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	790	560	575			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	94	100			
cM capacity (veh/h)	357	528	998			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	50	4	222	575
Volume Left	21	4	0	0
Volume Right	29	0	0	30
cSH	441	998	1700	1700
Volume to Capacity	0.11	0.00	0.13	0.34
Queue Length 95th (ft)	10	0	0	0
Control Delay (s)	14.2	8.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.2	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	0	3	1	0	4	5	211	0	2	513	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	0	3	1	0	4	5	229	0	2	558	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	813	809	564	812	815	229	571			229		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	813	809	564	812	815	229	571			229		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	100	100	99	99			100		
cM capacity (veh/h)	294	312	525	294	310	810	1002			1339		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	5	235	573
Volume Left	12	1	5	2
Volume Right	3	4	0	13
cSH	324	600	1002	1339
Volume to Capacity	0.05	0.01	0.01	0.00
Queue Length 95th (ft)	4	1	0	0
Control Delay (s)	16.6	11.1	0.3	0.0
Lane LOS	C	B	A	A
Approach Delay (s)	16.6	11.1	0.3	0.0
Approach LOS	C	B		

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A	
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	186	499	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	202	542	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	745	542	542			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	745	542	542			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	382	540	1026			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	202	542
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1026	1700
Volume to Capacity	0.00	0.00	0.32
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	27	207	22	63	359
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	29	225	24	68	390
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	764	237			249	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764	237			249	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	96			95	
cM capacity (veh/h)	352	802			1317	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	45	249	68	390
Volume Left	15	0	68	0
Volume Right	29	24	0	0
cSH	559	1700	1317	1700
Volume to Capacity	0.08	0.15	0.05	0.23
Queue Length 95th (ft)	6	0	4	0
Control Delay (s)	12.0	0.0	7.9	0.0
Lane LOS	B		A	
Approach Delay (s)	12.0	0.0	1.2	
Approach LOS	B			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	39	95	42	104	372	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	103	46	113	404	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	636	432	459			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	636	432	459			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	83	96			
cM capacity (veh/h)	424	624	1102			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	146	46	113	459
Volume Left	42	46	0	0
Volume Right	103	0	0	54
cSH	880	1102	1700	1700
Volume to Capacity	0.17	0.04	0.07	0.27
Queue Length 95th (ft)	15	3	0	0
Control Delay (s)	12.6	8.4	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.6	2.4		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	201	2056	1271	154	212	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3482		1765	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3482		1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	2235	1382	167	230	121
RTOR Reduction (vph)	0	0	12	0	2	88
Lane Group Flow (vph)	218	2235	1537	0	240	21
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	10.8	49.5	34.7		13.6	13.6
Effective Green, g (s)	10.8	49.5	34.7		13.6	13.6
Actuated g/C Ratio	0.15	0.70	0.49		0.19	0.19
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	2463	1699		337	287
v/s Ratio Prot	0.12	c0.63	0.44		c0.14	
v/s Ratio Perm						0.01
v/c Ratio	0.81	0.91	0.90		0.71	0.07
Uniform Delay, d1	29.2	8.9	16.7		26.9	23.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	17.0	5.3	7.2		6.9	0.1
Delay (s)	46.1	14.2	23.9		33.8	23.7
Level of Service	D	B	C		C	C
Approach Delay (s)		17.1	23.9		30.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2131	135	485	1281	8	116	4	629	6	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1735	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1735	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2316	147	527	1392	9	126	4	684	7	3	3
RTOR Reduction (vph)	0	0	66	0	0	2	0	0	157	0	0	0
Lane Group Flow (vph)	2	2316	81	527	1392	7	66	64	527	5	5	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	62.0	62.0	24.2	85.1	85.1	8.1	8.1	32.3	2.4	2.4	2.4
Effective Green, g (s)	1.1	62.0	62.0	24.2	85.1	85.1	8.1	8.1	32.3	2.4	2.4	2.4
Actuated g/C Ratio	0.01	0.55	0.55	0.21	0.76	0.76	0.07	0.07	0.29	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	33	2797	870	737	3839	1195	120	121	509	35	36	33
v/s Ratio Prot	0.00	c0.46		0.15	0.27		0.04	0.04	c0.22	c0.00	0.00	
v/s Ratio Perm			0.05			0.00			0.11			0.00
v/c Ratio	0.06	0.83	0.09	0.72	0.36	0.01	0.55	0.53	1.04	0.14	0.14	0.09
Uniform Delay, d1	55.3	20.9	12.0	41.1	4.7	3.4	50.5	50.5	40.2	54.1	54.1	54.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	2.1	0.0	3.3	0.1	0.0	5.4	4.1	49.3	1.9	1.8	1.2
Delay (s)	56.1	23.1	12.1	44.4	4.7	3.4	55.9	54.6	89.5	56.0	55.9	55.3
Level of Service	E	C	B	D	A	A	E	D	F	E	E	E
Approach Delay (s)		22.5			15.5			84.1			55.8	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	112.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1895	783	94	1146	21	541	25	108	27	15	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	2060	851	102	1246	23	588	27	117	29	16	64
RTOR Reduction (vph)	0	0	252	0	0	13	0	0	88	0	0	60
Lane Group Flow (vph)	97	2060	599	102	1246	10	588	27	29	29	16	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.8	38.5	54.6	4.0	35.7	35.7	16.1	16.1	20.1	5.6	5.6	5.6
Effective Green, g (s)	6.8	38.5	54.6	4.0	35.7	35.7	16.1	16.1	20.1	5.6	5.6	5.6
Actuated g/C Ratio	0.08	0.48	0.68	0.05	0.45	0.45	0.20	0.20	0.25	0.07	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	2441	1077	171	2263	704	689	373	475	123	130	110
v/s Ratio Prot	c0.05	c0.41	0.11	0.03	0.25		c0.17	0.01	0.00	c0.02	0.01	
v/s Ratio Perm			0.27			0.01			0.02			0.00
v/c Ratio	0.65	0.84	0.56	0.60	0.55	0.01	0.85	0.07	0.06	0.24	0.12	0.04
Uniform Delay, d1	35.5	18.2	6.6	37.3	16.4	12.4	30.9	26.0	22.9	35.3	35.0	34.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	2.9	0.6	5.5	0.3	0.0	10.0	0.1	0.1	1.0	0.4	0.2
Delay (s)	44.8	21.1	7.2	42.8	16.6	12.4	40.9	26.1	22.9	36.3	35.4	34.9
Level of Service	D	C	A	D	B	B	D	C	C	D	D	C
Approach Delay (s)		17.9			18.5			37.5			35.4	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	72.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	125	812	413	45	76	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	883	449	49	83	150
RTOR Reduction (vph)	0	0	0	28	0	108
Lane Group Flow (vph)	136	883	449	21	83	42
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	3.8	25.9	18.1	18.1	7.8	11.6
Effective Green, g (s)	3.8	25.9	18.1	18.1	7.8	11.6
Actuated g/C Ratio	0.09	0.62	0.43	0.43	0.19	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	1157	808	687	331	592
v/s Ratio Prot	0.04	c0.47	0.24		c0.05	0.01
v/s Ratio Perm				0.01		0.02
v/c Ratio	0.44	0.76	0.56	0.03	0.25	0.07
Uniform Delay, d1	17.9	5.7	8.8	6.8	14.5	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	3.0	0.8	0.0	0.4	0.1
Delay (s)	18.9	8.7	9.6	6.8	14.9	11.1
Level of Service	B	A	A	A	B	B
Approach Delay (s)		10.1	9.4		12.5	
Approach LOS		B	A		B	

Intersection Summary				
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	53.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	760	1	5	364	84	1	2	20	211	0	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1862		1770	1863	1583		1638			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1862		1770	1863	1583		1638			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	826	1	5	396	91	1	2	22	229	0	104
RTOR Reduction (vph)	0	0	0	0	0	53	0	20	0	0	0	85
Lane Group Flow (vph)	117	827	0	5	396	38	0	5	0	0	229	19
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.2	38.4		0.7	30.9	30.9		6.1			13.7	13.7
Effective Green, g (s)	8.2	38.4		0.7	30.9	30.9		6.1			13.7	13.7
Actuated g/C Ratio	0.11	0.51		0.01	0.41	0.41		0.08			0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	193	954		16	768	653		133			323	289
v/s Ratio Prot	c0.07	c0.44		0.00	0.21			c0.00			c0.13	
v/s Ratio Perm						0.02						0.01
v/c Ratio	0.61	0.87		0.31	0.52	0.06		0.04			0.71	0.07
Uniform Delay, d1	31.8	16.0		36.9	16.4	13.2		31.7			28.7	25.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	5.3	8.4		10.9	0.6	0.0		0.1			7.0	0.1
Delay (s)	37.1	24.4		47.7	17.0	13.3		31.8			35.7	25.4
Level of Service	D	C		D	B	B		C			D	C
Approach Delay (s)		26.0			16.6			31.8			32.5	
Approach LOS		C			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	71.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	326	583	9	2	264	5	6	2	6	3	1	162
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	354	634	10	2	287	5	7	2	7	3	1	176
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	292			643			1815	1644	639	1644	1646	290
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	292			643			1815	1644	639	1644	1646	290
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	72			100			82	97	99	95	98	77
cM capacity (veh/h)	1269			941			36	72	476	60	71	749

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	354	643	2	292	15	4	176
Volume Left	354	0	2	0	7	3	0
Volume Right	0	10	0	5	7	0	176
cSH	1269	1700	941	1700	67	63	749
Volume to Capacity	0.28	0.38	0.00	0.17	0.23	0.07	0.23
Queue Length 95th (ft)	29	0	0	0	20	5	23
Control Delay (s)	8.9	0.0	8.8	0.0	73.6	66.8	11.3
Lane LOS	A		A		F	F	B
Approach Delay (s)	3.2		0.1		73.6	12.6	
Approach LOS					F	B	

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	413	114	3	206	41	52	41	15	39	31	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1786			1775	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.81			0.82	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1484			1495	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	449	124	3	224	45	57	45	16	42	34	18
RTOR Reduction (vph)	0	0	68	0	0	28	0	12	0	0	14	0
Lane Group Flow (vph)	18	449	56	3	224	17	0	106	0	0	80	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.5	12.2	12.2	0.5	12.2	12.2		7.9			7.9	
Effective Green, g (s)	0.5	12.2	12.2	0.5	12.2	12.2		7.9			7.9	
Actuated g/C Ratio	0.02	0.37	0.37	0.02	0.37	0.37		0.24			0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	27	697	592	27	697	592		359			362	
v/s Ratio Prot	c0.01	c0.24		0.00	0.12							
v/s Ratio Perm			0.04			0.01		c0.07			0.05	
v/c Ratio	0.67	0.64	0.09	0.11	0.32	0.03		0.29			0.22	
Uniform Delay, d1	16.0	8.4	6.6	15.8	7.3	6.5		10.1			9.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	48.1	2.0	0.1	1.8	0.3	0.0		0.5			0.3	
Delay (s)	64.0	10.5	6.7	17.7	7.5	6.5		10.5			10.2	
Level of Service	E	B	A	B	A	A		B			B	
Approach Delay (s)		11.3			7.5			10.5			10.2	
Approach LOS		B			A			B			B	

Intersection Summary				
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	32.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	36.2%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	33	31	12	199	458	52
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	34	13	216	498	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	768	526	554			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	768	526	554			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	94	99			
cM capacity (veh/h)	365	552	1016			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	70	13	216	554
Volume Left	36	13	0	0
Volume Right	34	0	0	57
cSH	436	1016	1700	1700
Volume to Capacity	0.16	0.01	0.13	0.33
Queue Length 95th (ft)	14	1	0	0
Control Delay (s)	14.8	8.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.8	0.5		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	6	0	0	4	4	194	0	3	440	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1	7	0	0	4	4	211	0	3	478	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	713	709	483	716	713	211	487			211		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	713	709	483	716	713	211	487			211		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	100	100	99	100			100		
cM capacity (veh/h)	343	357	584	339	355	829	1076			1360		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	4	215	490
Volume Left	11	0	4	3
Volume Right	7	4	0	9
cSH	403	829	1076	1360
Volume to Capacity	0.05	0.01	0.00	0.00
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	14.4	9.4	0.2	0.1
Lane LOS	B	A	A	A
Approach Delay (s)	14.4	9.4	0.2	0.1
Approach LOS	B	A		

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		39.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	198	414	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	215	450	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	665	450	450			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	665	450	450			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	425	609	1110			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	215	450
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1110	1700
Volume to Capacity	0.00	0.00	0.26
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		25.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	13	35	131	27	73	350
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	38	142	29	79	380
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	696	157			172	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	696	157			172	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	96			94	
cM capacity (veh/h)	385	888			1405	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	52	172	79	380
Volume Left	14	0	79	0
Volume Right	38	29	0	0
cSH	656	1700	1405	1700
Volume to Capacity	0.08	0.10	0.06	0.22
Queue Length 95th (ft)	6	0	4	0
Control Delay (s)	11.0	0.0	7.7	0.0
Lane LOS	B		A	
Approach Delay (s)	11.0	0.0	1.3	
Approach LOS	B			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	54	76	53	114	306	36
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	83	58	124	333	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	591	352	372			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	591	352	372			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	88	95			
cM capacity (veh/h)	447	691	1187			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	141	58	124	372
Volume Left	59	58	0	0
Volume Right	83	0	0	39
cSH	1075	1187	1700	1700
Volume to Capacity	0.13	0.05	0.07	0.22
Queue Length 95th (ft)	11	4	0	0
Control Delay (s)	12.3	8.2	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.3	2.6		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	96	1555	1233	164	169	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3477		1762	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3477		1762	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	1690	1340	178	184	134
RTOR Reduction (vph)	0	0	16	0	5	96
Lane Group Flow (vph)	104	1690	1502	0	192	25
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	4.0	35.1	27.1		11.1	11.1
Effective Green, g (s)	4.0	35.1	27.1		11.1	11.1
Actuated g/C Ratio	0.07	0.65	0.50		0.20	0.20
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	130	2291	1738		360	308
v/s Ratio Prot	0.06	c0.48	c0.43		c0.11	
v/s Ratio Perm						0.02
v/c Ratio	0.80	0.74	0.86		0.53	0.08
Uniform Delay, d1	24.7	6.4	11.9		19.2	17.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	28.6	1.3	4.7		1.5	0.1
Delay (s)	53.3	7.7	16.7		20.8	17.5
Level of Service	D	A	B		C	B
Approach Delay (s)		10.4	16.7		19.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	1552	112	457	1295	40	87	9	526	5	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1701	1583	1681	1748	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1701	1583	1681	1748	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	1687	122	497	1408	43	95	10	572	5	3	4
RTOR Reduction (vph)	0	0	69	0	0	18	0	0	278	0	0	0
Lane Group Flow (vph)	61	1687	53	497	1408	25	52	53	294	4	4	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	4.0	28.8	28.8	14.2	39.0	39.0	6.0	6.0	20.2	1.0	1.0	1.0
Effective Green, g (s)	4.0	28.8	28.8	14.2	39.0	39.0	6.0	6.0	20.2	1.0	1.0	1.0
Actuated g/C Ratio	0.06	0.44	0.44	0.22	0.59	0.59	0.09	0.09	0.31	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	208	2218	690	738	3004	935	152	154	580	25	26	23
v/s Ratio Prot	0.02	c0.33		c0.14	0.28		0.03	0.03	c0.11	0.00	0.00	
v/s Ratio Perm			0.03			0.02			0.08			c0.00
v/c Ratio	0.29	0.76	0.08	0.67	0.47	0.03	0.34	0.34	0.51	0.16	0.15	0.17
Uniform Delay, d1	29.6	15.7	10.8	23.8	7.6	5.6	28.1	28.2	18.8	32.1	32.1	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.6	0.0	2.4	0.1	0.0	1.3	1.3	0.7	3.0	2.7	3.6
Delay (s)	30.4	17.3	10.9	26.2	7.8	5.6	29.5	29.5	19.5	35.1	34.8	35.7
Level of Service	C	B	B	C	A	A	C	C	B	D	C	D
Approach Delay (s)		17.3			12.4			21.1			35.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1423	579	82	1087	15	675	32	84	19	19	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1547	629	89	1182	16	734	35	91	21	21	67
RTOR Reduction (vph)	0	0	220	0	0	10	0	0	63	0	0	62
Lane Group Flow (vph)	87	1547	409	89	1182	6	734	35	28	21	21	5
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	4.5	26.5	44.5	3.0	25.0	25.0	18.0	18.0	21.0	5.0	5.0	5.0
Effective Green, g (s)	4.5	26.5	44.5	3.0	25.0	25.0	18.0	18.0	21.0	5.0	5.0	5.0
Actuated g/C Ratio	0.07	0.39	0.65	0.04	0.36	0.36	0.26	0.26	0.31	0.07	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	116	1967	1028	150	1855	577	902	489	577	129	135	115
v/s Ratio Prot	c0.05	c0.30	0.10	0.03	0.23		c0.21	0.02	0.00	c0.01	0.01	
v/s Ratio Perm			0.15			0.00			0.02			0.00
v/c Ratio	0.75	0.79	0.40	0.59	0.64	0.01	0.81	0.07	0.05	0.16	0.16	0.04
Uniform Delay, d1	31.4	18.5	5.7	32.2	18.0	13.9	23.7	19.0	16.7	29.8	29.8	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.5	3.3	0.3	6.2	0.7	0.0	5.7	0.1	0.0	0.6	0.5	0.2
Delay (s)	54.9	21.8	5.9	38.3	18.7	13.9	29.4	19.0	16.8	30.4	30.3	29.7
Level of Service	D	C	A	D	B	B	C	B	B	C	C	C
Approach Delay (s)		18.6			20.0			27.6			29.9	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	500	430	3	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	543	467	3	1	5
RTOR Reduction (vph)	0	0	0	2	0	3
Lane Group Flow (vph)	4	543	467	1	1	2
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	0.7	20.3	15.6	15.6	16.3	17.0
Effective Green, g (s)	0.7	20.3	15.6	15.6	16.3	17.0
Actuated g/C Ratio	0.02	0.46	0.35	0.35	0.37	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	53	847	651	553	646	745
v/s Ratio Prot	0.00	c0.29	0.25		0.00	c0.00
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.08	0.64	0.72	0.00	0.00	0.00
Uniform Delay, d1	21.6	9.3	12.6	9.4	9.0	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.7	3.8	0.0	0.0	0.0
Delay (s)	22.2	11.0	16.4	9.4	9.0	8.5
Level of Service	C	B	B	A	A	A
Approach Delay (s)		11.1	16.3		8.6	
Approach LOS		B	B		A	

Intersection Summary				
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	36.3%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	462	0	2	412	92	1	2	7	127	2	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1672			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1672			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	502	0	2	448	100	1	2	8	138	2	73
RTOR Reduction (vph)	0	0	0	0	0	67	0	6	0	0	0	64
Lane Group Flow (vph)	62	502	0	2	448	33	0	5	0	0	140	9
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	2.9	24.4		0.7	22.2	22.2		17.1			8.5	8.5
Effective Green, g (s)	2.9	24.4		0.7	22.2	22.2		17.1			8.5	8.5
Actuated g/C Ratio	0.04	0.37		0.01	0.33	0.33		0.26			0.13	0.13
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	76	681		18	620	526		428			226	201
v/s Ratio Prot	c0.04	c0.27		0.00	0.24			c0.00			c0.08	
v/s Ratio Perm						0.02						0.01
v/c Ratio	0.82	0.74		0.11	0.72	0.06		0.01			0.62	0.05
Uniform Delay, d1	31.6	18.4		32.7	19.5	15.2		18.5			27.6	25.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	46.7	4.2		2.7	4.2	0.1		0.1			5.0	0.1
Delay (s)	78.3	22.5		35.4	23.7	15.2		18.5			32.6	25.6
Level of Service	E	C		D	C	B		B			C	C
Approach Delay (s)		28.7			22.2			18.5			30.2	
Approach LOS		C			C			B			C	

Intersection Summary				
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	51.5%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	183	406	7	4	320	5	6	0	4	0	0	187
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	441	8	4	348	5	7	0	4	0	0	203
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	353			449			1403	1205	445	1203	1206	351
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	353			449			1403	1205	445	1203	1206	351
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			100			91	100	99	100	100	71
cM capacity (veh/h)	1205			1111			72	153	613	139	153	693

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	199	449	4	353	11	0	203
Volume Left	199	0	4	0	7	0	0
Volume Right	0	8	0	5	4	0	203
cSH	1205	1700	1111	1700	112	1700	693
Volume to Capacity	0.17	0.26	0.00	0.21	0.10	0.00	0.29
Queue Length 95th (ft)	15	0	0	0	8	0	31
Control Delay (s)	8.6	0.0	8.3	0.0	40.7	0.0	12.3
Lane LOS	A		A		E	A	B
Approach Delay (s)	2.6		0.1		40.7	12.3	
Approach LOS					E	B	

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	282	89	2	258	19	57	20	10	24	21	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1776			1757	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.82			0.91	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1511			1623	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	307	97	2	280	21	62	22	11	26	23	20
RTOR Reduction (vph)	0	0	70	0	0	15	0	6	0	0	12	0
Lane Group Flow (vph)	18	307	27	2	280	6	0	89	0	0	57	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.6	11.3	11.3	0.6	11.3	11.3		16.7			16.7	
Effective Green, g (s)	0.6	11.3	11.3	0.6	11.3	11.3		16.7			16.7	
Actuated g/C Ratio	0.01	0.28	0.28	0.01	0.28	0.28		0.41			0.41	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	26	518	440	26	518	440		621			667	
v/s Ratio Prot	c0.01	c0.16		0.00	0.15							
v/s Ratio Perm			0.02			0.00		c0.06			0.04	
v/c Ratio	0.69	0.59	0.06	0.08	0.54	0.01		0.14			0.09	
Uniform Delay, d1	19.9	12.7	10.8	19.7	12.4	10.6		7.5			7.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	57.6	1.8	0.1	1.3	1.2	0.0		0.5			0.3	
Delay (s)	77.5	14.5	10.8	21.0	13.6	10.6		8.0			7.5	
Level of Service	E	B	B	C	B	B		A			A	
Approach Delay (s)		16.3			13.4			8.0			7.5	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.33			
Actuated Cycle Length (s)	40.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	14	6	162	350	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	15	7	176	380	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	577	388	395			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577	388	395			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	98	99			
cM capacity (veh/h)	476	661	1164			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	25	7	176	395
Volume Left	10	7	0	0
Volume Right	15	0	0	14
cSH	574	1164	1700	1700
Volume to Capacity	0.04	0.01	0.10	0.23
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	11.6	8.1	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.6	0.3		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	0	3	0	0	4	1	241	0	2	280	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	3	0	0	4	1	262	0	2	304	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	585	580	312	584	588	262	320			262		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	585	580	312	584	588	262	320			262		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	99	100			100		
cM capacity (veh/h)	419	424	728	421	420	777	1240			1302		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	4	263	322
Volume Left	10	0	1	2
Volume Right	3	4	0	15
cSH	469	777	1240	1302
Volume to Capacity	0.03	0.01	0.00	0.00
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	12.9	9.7	0.0	0.1
Lane LOS	B	A	A	A
Approach Delay (s)	12.9	9.7	0.0	0.1
Approach LOS	B	A		

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization		31.0%	ICU Level of Service	A
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	4	1	218	289	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	1	237	314	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	554	315	316			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	554	315	316			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	493	725	1244			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	4	238	316
Volume Left	0	1	0
Volume Right	4	0	2
cSH	725	1244	1700
Volume to Capacity	0.01	0.00	0.19
Queue Length 95th (ft)	0	0	0
Control Delay (s)	10.0	0.0	0.0
Lane LOS	A	A	
Approach Delay (s)	10.0	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		25.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	37	164	17	39	225
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	40	178	18	42	245
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	517	188			197	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517	188			197	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	95			97	
cM capacity (veh/h)	503	855			1376	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	57	197	42	245
Volume Left	16	0	42	0
Volume Right	40	18	0	0
cSH	711	1700	1376	1700
Volume to Capacity	0.08	0.12	0.03	0.14
Queue Length 95th (ft)	6	0	2	0
Control Delay (s)	10.5	0.0	7.7	0.0
Lane LOS	B		A	
Approach Delay (s)	10.5	0.0	1.1	
Approach LOS	B			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	49	39	134	196	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	53	42	146	213	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	461	231	249			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	461	231	249			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	93	97			
cM capacity (veh/h)	540	808	1317			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	86	42	146	249
Volume Left	33	42	0	0
Volume Right	53	0	0	36
cSH	1303	1317	1700	1700
Volume to Capacity	0.07	0.03	0.09	0.15
Queue Length 95th (ft)	5	2	0	0
Control Delay (s)	10.6	7.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	10.6	1.8		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	54	1200	2028	141	94	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.93	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	3505		1692	1504
Flt Permitted	0.95	1.00	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	3505		1692	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	1304	2204	153	102	253
RTOR Reduction (vph)	0	0	5	0	33	69
Lane Group Flow (vph)	59	1304	2352	0	150	103
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	3.1	65.4	58.3		12.1	12.1
Effective Green, g (s)	3.1	65.4	58.3		12.1	12.1
Actuated g/C Ratio	0.04	0.76	0.68		0.14	0.14
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	64	2707	2389		239	212
v/s Ratio Prot	c0.03	0.37	c0.67		c0.09	
v/s Ratio Perm						0.07
v/c Ratio	0.92	0.48	0.98		0.63	0.49
Uniform Delay, d1	41.1	3.7	13.2		34.6	33.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	84.8	0.1	14.8		5.0	1.8
Delay (s)	125.9	3.9	28.0		39.6	35.6
Level of Service	F	A	C		D	D
Approach Delay (s)		9.2	28.0		37.7	
Approach LOS		A	C		D	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1238	63	449	1870	13	203	5	540	3	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1689	1583	1681	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1689	1583	1681	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1346	68	488	2033	14	221	5	587	3	3	0
RTOR Reduction (vph)	0	0	40	0	0	5	0	0	218	0	0	0
Lane Group Flow (vph)	5	1346	28	488	2033	9	113	113	369	3	3	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.9	30.6	30.6	15.8	45.5	45.5	10.3	10.3	26.1	0.9	0.9	
Effective Green, g (s)	0.9	30.6	30.6	15.8	45.5	45.5	10.3	10.3	26.1	0.9	0.9	
Actuated g/C Ratio	0.01	0.42	0.42	0.21	0.62	0.62	0.14	0.14	0.35	0.01	0.01	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	41	2114	658	736	3143	978	235	236	647	20	21	
v/s Ratio Prot	0.00	0.26		c0.14	c0.40		0.07	0.07	c0.12	c0.00	0.00	
v/s Ratio Perm			0.02			0.01			0.11			
v/c Ratio	0.12	0.64	0.04	0.66	0.65	0.01	0.48	0.48	0.57	0.15	0.14	
Uniform Delay, d1	36.0	17.1	12.8	26.5	8.9	5.4	29.2	29.2	19.2	36.0	36.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.6	0.0	2.3	0.5	0.0	1.6	1.5	1.2	3.5	3.1	
Delay (s)	37.3	17.7	12.8	28.7	9.4	5.4	30.7	30.7	20.4	39.4	39.1	
Level of Service	D	B	B	C	A	A	C	C	C	D	D	
Approach Delay (s)		17.6			13.1			23.3			39.3	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	943	774	114	1208	10	1083	33	162	5	9	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	1025	841	124	1313	11	1177	36	176	5	10	39
RTOR Reduction (vph)	0	0	261	0	0	8	0	0	97	0	0	37
Lane Group Flow (vph)	77	1025	580	124	1313	3	1177	36	79	5	10	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	4.0	23.1	53.2	5.0	24.1	24.1	30.1	30.1	35.1	3.6	3.6	3.6
Effective Green, g (s)	4.0	23.1	53.2	5.0	24.1	24.1	30.1	30.1	35.1	3.6	3.6	3.6
Actuated g/C Ratio	0.05	0.30	0.68	0.06	0.31	0.31	0.39	0.39	0.45	0.05	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	91	1509	1082	220	1575	490	1328	720	795	81	86	73
v/s Ratio Prot	c0.04	0.20	0.21	0.04	c0.26		c0.34	0.02	0.01	0.00	c0.01	
v/s Ratio Perm			0.16			0.00			0.04			0.00
v/c Ratio	0.85	0.68	0.54	0.56	0.83	0.01	0.89	0.05	0.10	0.06	0.12	0.02
Uniform Delay, d1	36.6	24.1	6.1	35.3	25.0	18.6	22.3	14.9	12.3	35.5	35.6	35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.9	1.2	0.5	3.3	4.0	0.0	7.5	0.0	0.1	0.3	0.6	0.1
Delay (s)	84.5	25.3	6.7	38.6	28.9	18.6	29.7	14.9	12.3	35.8	36.2	35.6
Level of Service	F	C	A	D	C	B	C	B	B	D	D	D
Approach Delay (s)		19.6			29.7			27.1			35.7	
Approach LOS		B			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	74.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	302	578	856	277	116	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	328	628	930	301	126	387
RTOR Reduction (vph)	0	0	0	132	0	86
Lane Group Flow (vph)	328	628	930	169	126	301
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	8.2	51.6	39.4	39.4	10.4	18.6
Effective Green, g (s)	8.2	51.6	39.4	39.4	10.4	18.6
Actuated g/C Ratio	0.12	0.74	0.56	0.56	0.15	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	402	1373	1048	891	262	511
v/s Ratio Prot	c0.10	0.34	c0.50		0.07	c0.07
v/s Ratio Perm				0.11		0.12
v/c Ratio	0.82	0.46	0.89	0.19	0.48	0.59
Uniform Delay, d1	30.2	3.6	13.4	7.5	27.3	22.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	0.2	9.2	0.1	1.4	1.7
Delay (s)	42.2	3.9	22.6	7.6	28.7	24.1
Level of Service	D	A	C	A	C	C
Approach Delay (s)		17.0	18.9		25.2	
Approach LOS		B	B		C	

Intersection Summary				
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	73.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	592	0	3	881	171	3	1	1	130	0	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1760			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1760			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	643	0	3	958	186	3	1	1	141	0	266
RTOR Reduction (vph)	0	0	0	0	0	53	0	1	0	0	0	227
Lane Group Flow (vph)	123	643	0	3	958	133	0	4	0	0	141	39
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	5.0	44.6		0.7	40.3	40.3		5.8			11.5	11.5
Effective Green, g (s)	5.0	44.6		0.7	40.3	40.3		5.8			11.5	11.5
Actuated g/C Ratio	0.06	0.57		0.01	0.51	0.51		0.07			0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	112	1057		15	955	811		129			258	231
v/s Ratio Prot	c0.07	0.35		0.00	c0.51			c0.00			c0.08	
v/s Ratio Perm						0.08						0.02
v/c Ratio	1.10	0.61		0.20	1.00	0.16		0.03			0.55	0.17
Uniform Delay, d1	36.8	11.2		38.7	19.1	10.2		33.8			31.1	29.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	113.9	1.0		6.5	29.9	0.1		0.1			2.4	0.3
Delay (s)	150.7	12.2		45.2	49.0	10.3		33.9			33.5	29.7
Level of Service	F	B		D	D	B		C			C	C
Approach Delay (s)		34.5			42.7			33.9			31.0	
Approach LOS		C			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	74.9%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	163	561	7	7	729	3	11	1	3	7	2	353
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	177	610	8	8	792	3	12	1	3	8	2	384
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	796			617			2160	1779	614	1777	1781	794
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	796			617			2160	1779	614	1777	1781	794
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			99			0	98	99	85	97	1
cM capacity (veh/h)	826			963			0	64	492	52	64	388

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	177	617	8	796	16	10	384
Volume Left	177	0	8	0	12	8	0
Volume Right	0	8	0	3	3	0	384
cSH	826	1700	963	1700	0	54	388
Volume to Capacity	0.21	0.36	0.01	0.47	38.45	0.18	0.99
Queue Length 95th (ft)	20	0	1	0	Err	15	293
Control Delay (s)	10.5	0.0	8.8	0.0	Err	85.0	76.1
Lane LOS	B		A		F	F	F
Approach Delay (s)	2.4		0.1		Err	76.3	
Approach LOS					F	F	

Intersection Summary			
Average Delay	97.1		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	505	35	2	556	64	117	33	5	69	25	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1788			1721	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.73			0.84	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1351			1472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	549	38	2	604	70	127	36	5	75	27	73
RTOR Reduction (vph)	0	0	22	0	0	40	0	2	0	0	43	0
Lane Group Flow (vph)	15	549	16	2	604	30	0	166	0	0	132	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.5	17.8	17.8	0.5	17.8	17.8		10.9			10.9	
Effective Green, g (s)	0.5	17.8	17.8	0.5	17.8	17.8		10.9			10.9	
Actuated g/C Ratio	0.01	0.43	0.43	0.01	0.43	0.43		0.26			0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	21	804	683	21	804	683		357			389	
v/s Ratio Prot	c0.01	0.29		0.00	c0.32							
v/s Ratio Perm			0.01			0.02		c0.12			0.09	
v/c Ratio	0.71	0.68	0.02	0.10	0.75	0.04		0.46			0.34	
Uniform Delay, d1	20.3	9.4	6.7	20.1	9.8	6.8		12.7			12.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	75.0	2.4	0.0	2.0	4.0	0.0		1.0			0.5	
Delay (s)	95.3	11.8	6.7	22.1	13.8	6.8		13.7			12.8	
Level of Service	F	B	A	C	B	A		B			B	
Approach Delay (s)		13.6			13.1			13.7			12.8	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	50.3%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	4	6	602	516	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	4	7	654	561	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1234	566	572			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1234	566	572			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	99			
cM capacity (veh/h)	194	523	1001			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	11	7	654	572
Volume Left	7	7	0	0
Volume Right	4	0	0	11
cSH	259	1001	1700	1700
Volume to Capacity	0.04	0.01	0.38	0.34
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	19.5	8.6	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	19.5	0.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	0	11	0	0	1	7	577	1	11	478	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	0	12	0	0	1	8	627	1	12	520	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1193	1193	526	1204	1198	628	532			628		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1193	1193	526	1204	1198	628	532			628		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	98	100	100	100	99			99		
cM capacity (veh/h)	161	183	552	155	182	483	1036			954		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	32	1	636	543
Volume Left	20	0	8	12
Volume Right	12	1	1	12
cSH	220	483	1036	954
Volume to Capacity	0.14	0.00	0.01	0.01
Queue Length 95th (ft)	12	0	1	1
Control Delay (s)	24.1	12.5	0.2	0.4
Lane LOS	C	B	A	A
Approach Delay (s)	24.1	12.5	0.2	0.4
Approach LOS	C	B		

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	147	32	76	410	199	344
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	160	35	83	446	216	374
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1014	403	590			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1014	403	590			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	34	95	92			
cM capacity (veh/h)	242	647	985			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	195	528	590
Volume Left	160	83	0
Volume Right	35	0	374
cSH	273	985	1700
Volume to Capacity	0.71	0.08	0.35
Queue Length 95th (ft)	124	7	0
Control Delay (s)	45.4	2.3	0.0
Lane LOS	E	A	
Approach Delay (s)	45.4	2.3	0.0
Approach LOS	E		

Intersection Summary				
Average Delay		7.6		
Intersection Capacity Utilization	77.5%	ICU Level of Service	D	
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	26	71	405	12	18	140
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	77	440	13	20	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	638	447			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	638	447			453	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	87			98	
cM capacity (veh/h)	433	612			1107	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	105	453	20	152
Volume Left	28	0	20	0
Volume Right	77	13	0	0
cSH	551	1700	1107	1700
Volume to Capacity	0.19	0.27	0.02	0.09
Queue Length 95th (ft)	18	0	1	0
Control Delay (s)	13.1	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	13.1	0.0	0.9	
Approach LOS	B			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	92	52	68	299	142	101
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	57	74	325	154	110
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	682	209	264			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	682	209	264			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	93	94			
cM capacity (veh/h)	392	831	1300			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	157	74	325	264
Volume Left	100	74	0	0
Volume Right	57	0	0	110
cSH	613	1300	1700	1700
Volume to Capacity	0.26	0.06	0.19	0.16
Queue Length 95th (ft)	25	5	0	0
Control Delay (s)	14.5	7.9	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.5	1.5		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	164	2290	1803	183	205	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3490		1761	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3490		1761	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	2489	1960	199	223	171
RTOR Reduction (vph)	0	0	8	0	3	128
Lane Group Flow (vph)	178	2489	2151	0	237	26
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	9.0	66.0	53.0		14.8	14.8
Effective Green, g (s)	9.0	66.0	53.0		14.8	14.8
Actuated g/C Ratio	0.10	0.74	0.60		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	179	2630	2082		293	250
v/s Ratio Prot	0.10	c0.70	c0.62		c0.13	
v/s Ratio Perm						0.02
v/c Ratio	0.99	0.95	1.03		0.81	0.10
Uniform Delay, d1	39.9	9.9	17.9		35.6	31.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	65.3	8.2	28.8		15.0	0.2
Delay (s)	105.2	18.0	46.7		50.6	31.6
Level of Service	F	B	D		D	C
Approach Delay (s)		23.8	46.7		43.2	
Approach LOS		C	D		D	

Intersection Summary				
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	89.3%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	2337	128	583	1867	6	113	2	730	8	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1713	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1713	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2540	139	634	2029	7	123	2	793	9	2	1
RTOR Reduction (vph)	0	0	66	0	0	2	0	0	125	0	0	0
Lane Group Flow (vph)	5	2540	73	634	2029	5	63	62	668	5	6	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	70.5	70.5	35.1	104.5	104.5	10.2	10.2	45.3	2.5	2.5	2.5
Effective Green, g (s)	1.1	70.5	70.5	35.1	104.5	104.5	10.2	10.2	45.3	2.5	2.5	2.5
Actuated g/C Ratio	0.01	0.52	0.52	0.26	0.78	0.78	0.08	0.08	0.34	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	28	2669	830	897	3956	1231	127	128	581	31	31	29
v/s Ratio Prot	0.00	c0.50		0.18	0.40		0.04	0.04	c0.30	0.00	c0.00	
v/s Ratio Perm			0.05			0.00			0.12			0.00
v/c Ratio	0.18	0.95	0.09	0.71	0.51	0.00	0.50	0.48	1.15	0.16	0.19	0.03
Uniform Delay, d1	66.2	30.3	15.9	44.9	5.5	3.3	59.6	59.5	44.5	64.9	64.9	64.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	8.7	0.0	2.6	0.1	0.0	3.0	2.9	85.9	2.4	3.0	0.5
Delay (s)	69.2	39.0	15.9	47.5	5.6	3.3	62.6	62.4	130.4	67.3	67.9	65.2
Level of Service	E	D	B	D	A	A	E	E	F	E	E	E
Approach Delay (s)		37.9			15.6			121.1			67.5	
Approach LOS		D			B			F			E	

Intersection Summary				
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.05			
Actuated Cycle Length (s)	134.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	103.7%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	1738	1240	143	1224	25	1146	26	150	29	32	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	1889	1348	155	1330	27	1246	28	163	32	35	86
RTOR Reduction (vph)	0	0	110	0	0	18	0	0	87	0	0	81
Lane Group Flow (vph)	123	1889	1238	155	1330	9	1246	28	76	32	35	5
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.1	52.0	110.0	8.0	46.9	46.9	58.0	58.0	66.0	8.1	8.1	8.1
Effective Green, g (s)	13.1	52.0	110.0	8.0	46.9	46.9	58.0	58.0	66.0	8.1	8.1	8.1
Actuated g/C Ratio	0.09	0.37	0.77	0.06	0.33	0.33	0.41	0.41	0.46	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	163	1860	1225	193	1678	522	1401	760	779	100	106	90
v/s Ratio Prot	c0.07	c0.37	c0.41	0.05	0.26		0.36	0.02	0.01	0.02	c0.02	
v/s Ratio Perm			0.37			0.01			0.04			0.00
v/c Ratio	0.75	1.02	1.01	0.80	0.79	0.02	0.89	0.04	0.10	0.32	0.33	0.05
Uniform Delay, d1	62.9	45.0	16.0	66.3	43.2	32.1	39.1	25.3	21.3	64.4	64.4	63.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.8	24.8	28.4	20.9	2.7	0.0	7.3	0.0	0.1	1.9	1.8	0.3
Delay (s)	80.8	69.9	44.5	87.2	45.8	32.1	46.3	25.3	21.4	66.2	66.2	63.6
Level of Service	F	E	D	F	D	C	D	C	C	E	E	E
Approach Delay (s)		60.1			49.8			43.1			64.8	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	142.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	84	1287	924	46	67	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1399	1004	50	73	118
RTOR Reduction (vph)	0	0	0	14	0	101
Lane Group Flow (vph)	91	1399	1004	36	73	17
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	4.0	73.3	65.3	65.3	9.1	13.1
Effective Green, g (s)	4.0	73.3	65.3	65.3	9.1	13.1
Actuated g/C Ratio	0.04	0.81	0.72	0.72	0.10	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	151	1510	1345	1143	178	299
v/s Ratio Prot	0.03	c0.75	0.54		c0.04	0.00
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.60	0.93	0.75	0.03	0.41	0.06
Uniform Delay, d1	42.4	6.5	7.6	3.6	38.1	33.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	10.0	2.3	0.0	1.5	0.1
Delay (s)	49.0	16.5	9.9	3.6	39.7	33.4
Level of Service	D	B	A	A	D	C
Approach Delay (s)		18.5	9.6		35.8	
Approach LOS		B	A		D	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	1209	1	5	842	159	1	3	18	275	5	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1650			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1650			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	1314	1	5	915	173	1	3	20	299	5	112
RTOR Reduction (vph)	0	0	0	0	0	37	0	19	0	0	0	80
Lane Group Flow (vph)	115	1315	0	5	915	136	0	5	0	0	304	32
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	10.0	93.1		0.8	83.9	83.9		6.4			21.0	21.0
Effective Green, g (s)	10.0	93.1		0.8	83.9	83.9		6.4			21.0	21.0
Actuated g/C Ratio	0.07	0.68		0.01	0.61	0.61		0.05			0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	128	1263		10	1138	967		76			271	242
v/s Ratio Prot	c0.06	c0.71		0.00	0.49			c0.00			c0.17	
v/s Ratio Perm						0.09						0.02
v/c Ratio	0.90	1.04		0.50	0.80	0.14		0.06			1.12	0.13
Uniform Delay, d1	63.1	22.1		68.1	20.4	11.4		62.6			58.2	50.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	49.3	36.7		34.4	4.2	0.1		0.4			91.5	0.2
Delay (s)	112.5	58.8		102.4	24.6	11.4		62.9			149.6	50.5
Level of Service	F	E		F	C	B		E			F	D
Approach Delay (s)		63.1			22.9			62.9			122.9	
Approach LOS		E			C			E			F	

Intersection Summary				
HCM 2000 Control Delay	56.7	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	137.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	99.2%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	331	1118	14	3	836	11	6	1	3	9	1	189
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	360	1215	15	3	909	12	7	1	3	10	1	205
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	921			1230			3064	2870	1223	2860	2871	915
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	921			1230			3064	2870	1223	2860	2871	915
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	51			99			0	87	99	0	87	38
cM capacity (veh/h)	742			566			2	8	219	6	8	331

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	360	1230	3	921	11	11	205
Volume Left	360	0	3	0	7	10	0
Volume Right	0	15	0	12	3	0	205
cSH	742	1700	566	1700	3	6	331
Volume to Capacity	0.49	0.72	0.01	0.54	4.22	1.79	0.62
Queue Length 95th (ft)	67	0	0	0	Err	59	98
Control Delay (s)	14.3	0.0	11.4	0.0	Err	1489.0	32.2
Lane LOS	B		B		F	F	D
Approach Delay (s)	3.2		0.0		Err	105.4	
Approach LOS					F	F	

Intersection Summary			
Average Delay	49.9		
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	950	121	3	757	71	69	38	22	92	25	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1772			1765	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.79			0.73	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1434			1331	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1033	132	3	823	77	75	41	24	100	27	23
RTOR Reduction (vph)	0	0	26	0	0	30	0	10	0	0	8	0
Lane Group Flow (vph)	29	1033	106	3	823	47	0	130	0	0	142	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.3	40.8	40.8	0.6	40.1	40.1		12.0			12.0	
Effective Green, g (s)	1.3	40.8	40.8	0.6	40.1	40.1		12.0			12.0	
Actuated g/C Ratio	0.02	0.62	0.62	0.01	0.61	0.61		0.18			0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	35	1162	987	16	1142	970		263			244	
v/s Ratio Prot	c0.02	c0.55		0.00	0.44							
v/s Ratio Perm			0.07			0.03		0.09			c0.11	
v/c Ratio	0.83	0.89	0.11	0.19	0.72	0.05		0.50			0.58	
Uniform Delay, d1	31.9	10.4	5.0	32.2	8.8	5.0		24.0			24.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	84.5	8.6	0.0	5.6	2.3	0.0		1.5			3.5	
Delay (s)	116.4	18.9	5.0	37.8	11.0	5.1		25.4			27.9	
Level of Service	F	B	A	D	B	A		C			C	
Approach Delay (s)		19.8			10.6			25.4			27.9	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	67.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	27	4	809	1017	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	29	4	879	1105	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2009	1121	1136			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2009	1121	1136			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	88	99			
cM capacity (veh/h)	65	251	615			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	50	4	879	1136
Volume Left	21	4	0	0
Volume Right	29	0	0	30
cSH	114	615	1700	1700
Volume to Capacity	0.44	0.01	0.52	0.67
Queue Length 95th (ft)	47	1	0	0
Control Delay (s)	58.9	10.9	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	58.9	0.1		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	65.2%	ICU Level of Service	C	
Analysis Period (min)	15			

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	0	16	1	0	4	20	816	0	2	1029	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	0	17	1	0	4	22	887	0	2	1118	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2064	2060	1125	2077	2066	887	1132			887		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2064	2060	1125	2077	2066	887	1132			887		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	93	97	100	99	96			100		
cM capacity (veh/h)	39	53	250	36	52	343	617			763		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	5	909	1134
Volume Left	12	1	22	2
Volume Right	17	4	0	13
cSH	77	126	617	763
Volume to Capacity	0.38	0.04	0.04	0.00
Queue Length 95th (ft)	37	3	3	0
Control Delay (s)	77.8	35.0	1.1	0.1
Lane LOS	F	D	A	A
Approach Delay (s)	77.8	35.0	1.1	0.1
Approach LOS	F	D		

Intersection Summary				
Average Delay		1.7		
Intersection Capacity Utilization	68.2%		ICU Level of Service	C
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	620	136	116	186	499	529
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	674	148	126	202	542	575
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1284	830	1117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1284	830	1117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	60	80			
cM capacity (veh/h)	145	370	625			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	822	328	1117
Volume Left	674	126	0
Volume Right	148	0	575
cSH	163	625	1700
Volume to Capacity	5.04	0.20	0.66
Queue Length 95th (ft)	Err	19	0
Control Delay (s)	Err	6.4	0.0
Lane LOS	F	A	
Approach Delay (s)	Err	6.4	0.0
Approach LOS	F		

Intersection Summary				
Average Delay		3624.7		
Intersection Capacity Utilization	127.5%		ICU Level of Service	H
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	33	317	22	71	487
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	36	345	24	77	529
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1040	357			368	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1040	357			368	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	95			94	
cM capacity (veh/h)	238	688			1190	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	51	368	77	529
Volume Left	15	0	77	0
Volume Right	36	24	0	0
cSH	440	1700	1190	1700
Volume to Capacity	0.12	0.22	0.06	0.31
Queue Length 95th (ft)	10	0	5	0
Control Delay (s)	14.2	0.0	8.2	0.0
Lane LOS	B		A	
Approach Delay (s)	14.2	0.0	1.0	
Approach LOS	B			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	142	95	42	110	380	171
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	103	46	120	413	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	717	506	599			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	717	506	599			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	82	95			
cM capacity (veh/h)	378	566	978			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	258	46	120	599
Volume Left	154	46	0	0
Volume Right	103	0	0	186
cSH	631	978	1700	1700
Volume to Capacity	0.41	0.05	0.07	0.35
Queue Length 95th (ft)	50	4	0	0
Control Delay (s)	17.7	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.7	2.4		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	201	2354	1535	154	212	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3491		1765	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3491		1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	2559	1668	167	230	121
RTOR Reduction (vph)	0	0	8	0	2	91
Lane Group Flow (vph)	218	2559	1827	0	240	18
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.0	66.0	50.0		14.9	14.9
Effective Green, g (s)	12.0	66.0	50.0		14.9	14.9
Actuated g/C Ratio	0.13	0.74	0.56		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	238	2627	1963		295	252
v/s Ratio Prot	0.12	c0.72	0.52		c0.14	
v/s Ratio Perm						0.01
v/c Ratio	0.92	0.97	0.93		0.81	0.07
Uniform Delay, d1	38.0	10.7	17.9		35.6	31.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	36.1	12.1	8.6		15.5	0.1
Delay (s)	74.1	22.7	26.4		51.1	31.3
Level of Service	E	C	C		D	C
Approach Delay (s)		26.7	26.4		45.0	
Approach LOS		C	C		D	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2429	135	509	1545	8	116	4	656	6	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1735	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1735	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2640	147	553	1679	9	126	4	713	7	3	3
RTOR Reduction (vph)	0	0	67	0	0	2	0	0	128	0	0	0
Lane Group Flow (vph)	2	2640	80	553	1679	7	66	64	585	5	5	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	73.6	73.6	32.1	104.6	104.6	10.4	10.4	42.5	2.5	2.5	2.5
Effective Green, g (s)	1.1	73.6	73.6	32.1	104.6	104.6	10.4	10.4	42.5	2.5	2.5	2.5
Actuated g/C Ratio	0.01	0.55	0.55	0.24	0.78	0.78	0.08	0.08	0.32	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	28	2780	865	818	3951	1230	129	130	546	31	32	29
v/s Ratio Prot	0.00	c0.52		0.16	0.33		0.04	0.04	c0.26	c0.00	0.00	
v/s Ratio Perm			0.05			0.00			0.11			0.00
v/c Ratio	0.07	0.95	0.09	0.68	0.42	0.01	0.51	0.49	1.07	0.16	0.16	0.10
Uniform Delay, d1	66.2	28.8	14.6	46.5	5.0	3.4	59.7	59.6	46.0	65.0	65.0	64.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	8.1	0.0	2.2	0.1	0.0	3.4	2.9	59.1	2.4	2.3	1.6
Delay (s)	67.3	36.9	14.6	48.8	5.1	3.4	63.1	62.5	105.1	67.5	67.3	66.5
Level of Service	E	D	B	D	A	A	E	E	F	E	E	E
Approach Delay (s)		35.7			15.8			98.6			67.2	
Approach LOS		D			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	134.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1895	1108	121	1146	21	829	25	132	27	15	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	2060	1204	132	1246	23	901	27	143	29	16	64
RTOR Reduction (vph)	0	0	219	0	0	14	0	0	96	0	0	60
Lane Group Flow (vph)	97	2060	985	132	1246	9	901	27	47	29	16	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	7.0	39.0	65.1	4.0	36.0	36.0	26.1	26.1	30.1	5.8	5.8	5.8
Effective Green, g (s)	7.0	39.0	65.1	4.0	36.0	36.0	26.1	26.1	30.1	5.8	5.8	5.8
Actuated g/C Ratio	0.08	0.43	0.72	0.04	0.40	0.40	0.29	0.29	0.33	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136	2181	1133	151	2013	626	985	534	593	112	118	101
v/s Ratio Prot	c0.05	c0.41	0.25	0.04	0.25		c0.26	0.01	0.00	c0.02	0.01	
v/s Ratio Perm			0.37			0.01			0.03			0.00
v/c Ratio	0.71	0.94	0.87	0.87	0.62	0.01	0.91	0.05	0.08	0.26	0.14	0.04
Uniform Delay, d1	41.0	24.9	9.7	43.2	22.0	16.7	31.3	23.4	20.9	40.5	40.2	39.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.2	9.3	7.3	38.9	0.6	0.0	12.6	0.0	0.1	1.2	0.5	0.2
Delay (s)	57.2	34.2	17.0	82.1	22.5	16.7	43.9	23.5	20.9	41.7	40.7	40.1
Level of Service	E	C	B	F	C	B	D	C	C	D	D	D
Approach Delay (s)		28.7			28.1			40.4			40.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	85.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	125	1164	724	45	76	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1265	787	49	83	150
RTOR Reduction (vph)	0	0	0	19	0	116
Lane Group Flow (vph)	136	1265	787	30	83	34
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	7.1	54.0	42.9	42.9	9.1	16.2
Effective Green, g (s)	7.1	54.0	42.9	42.9	9.1	16.2
Actuated g/C Ratio	0.10	0.76	0.60	0.60	0.13	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	342	1414	1124	955	226	449
v/s Ratio Prot	0.04	c0.68	0.42		c0.05	0.01
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.40	0.89	0.70	0.03	0.37	0.08
Uniform Delay, d1	30.0	6.4	9.7	5.7	28.4	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	7.7	2.0	0.0	1.0	0.1
Delay (s)	30.8	14.1	11.7	5.7	29.4	21.6
Level of Service	C	B	B	A	C	C
Approach Delay (s)		15.7	11.3		24.4	
Approach LOS		B	B		C	

Intersection Summary				
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	72.1%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1112	1	5	675	117	1	2	20	248	0	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1638			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1638			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1209	1	5	734	127	1	2	22	270	0	104
RTOR Reduction (vph)	0	0	0	0	0	43	0	21	0	0	0	86
Lane Group Flow (vph)	117	1210	0	5	734	84	0	4	0	0	270	18
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	12.6	85.1		0.7	73.2	73.2		6.3			19.0	19.0
Effective Green, g (s)	12.6	85.1		0.7	73.2	73.2		6.3			19.0	19.0
Actuated g/C Ratio	0.10	0.67		0.01	0.58	0.58		0.05			0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	175	1247		9	1072	911		81			264	236
v/s Ratio Prot	c0.07	c0.65		0.00	0.39			c0.00			c0.15	
v/s Ratio Perm						0.05						0.01
v/c Ratio	0.67	0.97		0.56	0.68	0.09		0.05			1.02	0.08
Uniform Delay, d1	55.2	19.8		63.0	18.9	12.1		57.6			54.0	46.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	9.3	18.7		58.1	1.8	0.0		0.3			61.4	0.1
Delay (s)	64.5	38.5		121.2	20.7	12.1		57.8			115.4	46.6
Level of Service	E	D		F	C	B		E			F	D
Approach Delay (s)		40.8			20.0			57.8			96.3	
Approach LOS		D			C			E			F	

Intersection Summary				
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	127.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	92.3%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	326	972	9	2	608	10	6	2	6	8	1	162
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	354	1057	10	2	661	11	7	2	7	9	1	176
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	672			1066			2612	2446	1061	2443	2446	666
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	672			1066			2612	2446	1061	2443	2446	666
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	61			100			2	89	98	35	94	62
cM capacity (veh/h)	919			653			7	19	272	13	19	459

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	354	1066	2	672	15	10	176
Volume Left	354	0	2	0	7	9	0
Volume Right	0	10	0	11	7	0	176
cSH	919	1700	653	1700	14	14	459
Volume to Capacity	0.39	0.63	0.00	0.40	1.11	0.70	0.38
Queue Length 95th (ft)	46	0	0	0	62	42	44
Control Delay (s)	11.4	0.0	10.5	0.0	659.0	492.5	17.6
Lane LOS	B		B		F	F	C
Approach Delay (s)	2.8		0.0		659.0	42.6	
Approach LOS					F	E	

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	807	114	3	555	69	52	41	15	71	31	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1786			1775	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.84			0.81	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1535			1472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	877	124	3	603	75	57	45	16	77	34	18
RTOR Reduction (vph)	0	0	36	0	0	32	0	10	0	0	10	0
Lane Group Flow (vph)	18	877	88	3	603	43	0	108	0	0	119	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.6	28.9	28.9	0.6	28.9	28.9		9.4			9.4	
Effective Green, g (s)	0.6	28.9	28.9	0.6	28.9	28.9		9.4			9.4	
Actuated g/C Ratio	0.01	0.57	0.57	0.01	0.57	0.57		0.18			0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	20	1057	898	20	1057	898		283			271	
v/s Ratio Prot	c0.01	c0.47		0.00	0.32							
v/s Ratio Perm			0.06			0.03		0.07			c0.08	
v/c Ratio	0.90	0.83	0.10	0.15	0.57	0.05		0.38			0.44	
Uniform Delay, d1	25.1	9.0	5.0	24.9	7.0	4.9		18.2			18.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	153.9	5.5	0.0	3.5	0.7	0.0		0.9			1.1	
Delay (s)	179.0	14.5	5.1	28.4	7.8	4.9		19.1			19.6	
Level of Service	F	B	A	C	A	A		B			B	
Approach Delay (s)		16.3			7.6			19.1			19.6	
Approach LOS		B			A			B			B	

Intersection Summary				
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	58.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	33	31	12	576	884	52
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	34	13	626	961	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1641	989	1017			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1641	989	1017			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	67	89	98			
cM capacity (veh/h)	108	299	682			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	70	13	626	1017
Volume Left	36	13	0	0
Volume Right	34	0	0	57
cSH	156	682	1700	1700
Volume to Capacity	0.44	0.02	0.37	0.60
Queue Length 95th (ft)	51	1	0	0
Control Delay (s)	45.3	10.4	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	45.3	0.2		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	17	0	0	4	13	571	0	3	866	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1	18	0	0	4	14	621	0	3	941	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1605	1601	946	1620	1605	621	950			621		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1605	1601	946	1620	1605	621	950			621		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	99	94	100	100	99	98			100		
cM capacity (veh/h)	83	103	317	76	103	488	723			960		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	4	635	953
Volume Left	11	0	14	3
Volume Right	18	4	0	9
cSH	152	488	723	960
Volume to Capacity	0.20	0.01	0.02	0.00
Queue Length 95th (ft)	18	1	1	0
Control Delay (s)	34.6	12.5	0.5	0.1
Lane LOS	D	B	A	A
Approach Delay (s)	34.6	12.5	0.5	0.1
Approach LOS	D	B		

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		62.5%	ICU Level of Service	B
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	387	85	96	198	414	437
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	92	104	215	450	475
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1111	688	925			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1111	688	925			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	79	86			
cM capacity (veh/h)	199	447	739			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	513	320	925
Volume Left	421	104	0
Volume Right	92	0	475
cSH	221	739	1700
Volume to Capacity	2.33	0.14	0.54
Queue Length 95th (ft)	1031	12	0
Control Delay (s)	645.3	4.6	0.0
Lane LOS	F	A	
Approach Delay (s)	645.3	4.6	0.0
Approach LOS	F		

Intersection Summary				
Average Delay		189.2		
Intersection Capacity Utilization		100.9%	ICU Level of Service	G
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	13	40	222	27	78	430
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	43	241	29	85	467
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	893	256			271	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	893	256			271	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	94			93	
cM capacity (veh/h)	292	783			1293	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	58	271	85	467
Volume Left	14	0	85	0
Volume Right	43	29	0	0
cSH	554	1700	1293	1700
Volume to Capacity	0.10	0.16	0.07	0.27
Queue Length 95th (ft)	9	0	5	0
Control Delay (s)	12.3	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	12.3	0.0	1.2	
Approach LOS	B			

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	139	76	53	119	311	111
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	151	83	58	129	338	121
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	643	398	459			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643	398	459			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	64	87	95			
cM capacity (veh/h)	415	651	1102			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	234	58	129	459
Volume Left	151	58	0	0
Volume Right	83	0	0	121
cSH	642	1102	1700	1700
Volume to Capacity	0.36	0.05	0.08	0.27
Queue Length 95th (ft)	42	4	0	0
Control Delay (s)	16.0	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.0	2.6		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	96	1916	1656	164	169	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3491		1762	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3491		1762	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	2083	1800	178	184	134
RTOR Reduction (vph)	0	0	9	0	3	100
Lane Group Flow (vph)	104	2083	1969	0	194	21
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	5.0	55.0	46.0		12.9	12.9
Effective Green, g (s)	5.0	55.0	46.0		12.9	12.9
Actuated g/C Ratio	0.07	0.72	0.61		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	116	2564	2115		299	255
v/s Ratio Prot	0.06	c0.59	c0.56		c0.11	
v/s Ratio Perm						0.01
v/c Ratio	0.90	0.81	0.93		0.65	0.08
Uniform Delay, d1	35.2	7.0	13.5		29.4	26.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	52.2	2.1	8.1		4.8	0.1
Delay (s)	87.4	9.1	21.6		34.2	26.7
Level of Service	F	A	C		C	C
Approach Delay (s)		12.8	21.6		31.3	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	1913	112	495	1718	40	87	9	558	5	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1701	1583	1681	1748	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1701	1583	1681	1748	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	2079	122	538	1867	43	95	10	607	5	3	4
RTOR Reduction (vph)	0	0	59	0	0	15	0	0	202	0	0	0
Lane Group Flow (vph)	61	2079	63	538	1867	28	52	53	405	4	4	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.6	45.6	45.6	17.8	57.8	57.8	6.7	6.7	24.5	2.2	2.2	2.2
Effective Green, g (s)	5.6	45.6	45.6	17.8	57.8	57.8	6.7	6.7	24.5	2.2	2.2	2.2
Actuated g/C Ratio	0.06	0.52	0.52	0.20	0.65	0.65	0.08	0.08	0.28	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	2626	817	692	3328	1036	127	129	510	41	43	39
v/s Ratio Prot	0.02	c0.41		0.16	0.37		0.03	0.03	c0.16	0.00	0.00	
v/s Ratio Perm			0.04			0.02			0.10			c0.00
v/c Ratio	0.28	0.79	0.08	0.78	0.56	0.03	0.41	0.41	0.79	0.10	0.09	0.10
Uniform Delay, d1	39.4	17.5	10.8	33.4	8.3	5.4	38.9	38.9	29.6	42.1	42.1	42.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.7	0.0	5.5	0.2	0.0	2.1	2.1	8.4	1.0	0.9	1.2
Delay (s)	40.1	19.2	10.8	38.9	8.5	5.4	41.1	41.0	37.9	43.1	43.0	43.2
Level of Service	D	B	B	D	A	A	D	D	D	D	D	D
Approach Delay (s)		19.3			15.2			38.4			43.1	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1423	972	114	1087	15	1136	32	122	19	19	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1547	1057	124	1182	16	1235	35	133	21	21	67
RTOR Reduction (vph)	0	0	208	0	0	11	0	0	76	0	0	63
Lane Group Flow (vph)	87	1547	849	124	1182	5	1235	35	57	21	21	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	30.0	64.1	5.0	29.5	29.5	34.1	34.1	39.1	5.4	5.4	5.4
Effective Green, g (s)	5.5	30.0	64.1	5.0	29.5	29.5	34.1	34.1	39.1	5.4	5.4	5.4
Actuated g/C Ratio	0.06	0.33	0.71	0.06	0.33	0.33	0.38	0.38	0.43	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	107	1685	1121	189	1657	516	1293	701	753	105	111	94
v/s Ratio Prot	c0.05	c0.30	0.29	0.04	0.23		c0.36	0.02	0.00	c0.01	0.01	
v/s Ratio Perm			0.25			0.00			0.03			0.00
v/c Ratio	0.81	0.92	0.76	0.66	0.71	0.01	0.96	0.05	0.08	0.20	0.19	0.04
Uniform Delay, d1	42.0	29.1	8.3	41.9	26.8	20.6	27.5	17.9	15.1	40.5	40.5	40.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.7	9.5	3.0	7.9	1.5	0.0	15.4	0.0	0.0	0.9	0.8	0.2
Delay (s)	77.7	38.6	11.3	49.9	28.3	20.6	42.9	17.9	15.1	41.4	41.3	40.3
Level of Service	E	D	B	D	C	C	D	B	B	D	D	D
Approach Delay (s)		29.1			30.2			39.6			40.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	926	929	3	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	1007	1010	3	1	5
RTOR Reduction (vph)	0	0	0	1	0	4
Lane Group Flow (vph)	4	1007	1010	2	1	1
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	0.7	45.6	40.9	40.9	16.4	17.1
Effective Green, g (s)	0.7	45.6	40.9	40.9	16.4	17.1
Actuated g/C Ratio	0.01	0.65	0.58	0.58	0.23	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	34	1213	1088	924	414	477
v/s Ratio Prot	0.00	c0.54	c0.54		0.00	c0.00
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.12	0.83	0.93	0.00	0.00	0.00
Uniform Delay, d1	34.3	9.3	13.2	6.1	20.5	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	5.0	13.2	0.0	0.0	0.0
Delay (s)	35.9	14.2	26.5	6.1	20.5	20.0
Level of Service	D	B	C	A	C	C
Approach Delay (s)		14.3	26.4		20.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	888	0	2	911	145	1	2	7	172	2	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1672			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1672			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	965	0	2	990	158	1	2	8	187	2	73
RTOR Reduction (vph)	0	0	0	0	0	40	0	7	0	0	0	63
Lane Group Flow (vph)	62	965	0	2	990	118	0	4	0	0	189	10
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	4.0	64.4		0.8	61.2	61.2		16.0			14.7	14.7
Effective Green, g (s)	4.0	64.4		0.8	61.2	61.2		16.0			14.7	14.7
Actuated g/C Ratio	0.04	0.58		0.01	0.55	0.55		0.14			0.13	0.13
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	63	1072		12	1018	865		239			233	207
v/s Ratio Prot	c0.04	c0.52		0.00	c0.53			c0.00			c0.11	
v/s Ratio Perm						0.07						0.01
v/c Ratio	0.98	0.90		0.17	0.97	0.14		0.02			0.81	0.05
Uniform Delay, d1	53.9	20.9		55.2	24.5	12.4		41.2			47.3	42.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	107.2	10.3		6.5	21.6	0.1		0.1			18.9	0.1
Delay (s)	161.1	31.3		61.7	46.2	12.5		41.3			66.1	42.6
Level of Service	F	C		E	D	B		D			E	D
Approach Delay (s)		39.1			41.6			41.3			59.6	
Approach LOS		D			D			D			E	

Intersection Summary				
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	70.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	183	877	7	4	872	13	6	0	4	6	0	187
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	953	8	4	948	14	7	0	4	7	0	203
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	962			961			2515	2326	957	2319	2322	955
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	962			961			2515	2326	957	2319	2322	955
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	72			99			0	100	99	68	100	35
cM capacity (veh/h)	715			716			5	27	312	20	27	313

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	199	961	4	962	11	7	203
Volume Left	199	0	4	0	7	7	0
Volume Right	0	8	0	14	4	0	203
cSH	715	1700	716	1700	9	20	313
Volume to Capacity	0.28	0.57	0.01	0.57	1.26	0.32	0.65
Queue Length 95th (ft)	28	0	0	0	54	23	106
Control Delay (s)	12.0	0.0	10.1	0.0	972.2	250.6	35.4
Lane LOS	B		B		F	F	E
Approach Delay (s)	2.1		0.0		972.2	42.1	
Approach LOS					F	E	

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	72.7%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	759	89	2	817	64	57	20	10	63	21	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1776			1763	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.78			0.79	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1431			1441	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	825	97	2	888	70	62	22	11	68	23	20
RTOR Reduction (vph)	0	0	37	0	0	33	0	7	0	0	11	0
Lane Group Flow (vph)	18	825	60	2	888	37	0	88	0	0	100	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.7	32.3	32.3	0.7	32.3	32.3		16.3			16.3	
Effective Green, g (s)	0.7	32.3	32.3	0.7	32.3	32.3		16.3			16.3	
Actuated g/C Ratio	0.01	0.53	0.53	0.01	0.53	0.53		0.27			0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	20	981	834	20	981	834		380			383	
v/s Ratio Prot	c0.01	0.44		0.00	c0.48							
v/s Ratio Perm			0.04			0.02		0.06			c0.07	
v/c Ratio	0.90	0.84	0.07	0.10	0.91	0.04		0.23			0.26	
Uniform Delay, d1	30.3	12.3	7.1	30.0	13.1	7.0		17.6			17.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	153.9	6.6	0.0	2.2	11.6	0.0		1.4			1.7	
Delay (s)	184.2	18.9	7.2	32.2	24.7	7.0		19.0			19.4	
Level of Service	F	B	A	C	C	A		B			B	
Approach Delay (s)		20.9			23.4			19.0			19.4	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	56.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	14	6	767	866	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	15	7	834	941	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1795	948	955			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1795	948	955			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	95	99			
cM capacity (veh/h)	88	316	720			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	25	7	834	955
Volume Left	10	7	0	0
Volume Right	15	0	0	14
cSH	156	720	1700	1700
Volume to Capacity	0.16	0.01	0.49	0.56
Queue Length 95th (ft)	14	1	0	0
Control Delay (s)	32.3	10.0	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	32.3	0.1		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	0	16	0	0	4	16	846	0	2	796	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	17	0	0	4	17	920	0	2	865	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1836	1832	873	1849	1839	920	880			920		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1836	1832	873	1849	1839	920	880			920		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	95	100	100	99	98			100		
cM capacity (veh/h)	56	74	350	53	74	328	768			742		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	4	937	883
Volume Left	10	0	17	2
Volume Right	17	4	0	15
cSH	122	328	768	742
Volume to Capacity	0.22	0.01	0.02	0.00
Queue Length 95th (ft)	20	1	2	0
Control Delay (s)	42.8	16.1	0.7	0.1
Lane LOS	E	C	A	A
Approach Delay (s)	42.8	16.1	0.7	0.1
Approach LOS	E	C		

Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization	71.3%	ICU Level of Service	C	
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	620	140	117	218	289	531
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	674	152	127	237	314	577
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1094	603	891			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1094	603	891			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	70	83			
cM capacity (veh/h)	197	499	761			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	826	364	891
Volume Left	674	127	0
Volume Right	152	0	577
cSH	222	761	1700
Volume to Capacity	3.72	0.17	0.52
Queue Length 95th (ft)	Err	15	0
Control Delay (s)	Err	5.1	0.0
Lane LOS	F	A	
Approach Delay (s)	Err	5.1	0.0
Approach LOS	F		

Intersection Summary				
Average Delay		3969.2		
Intersection Capacity Utilization	118.6%	ICU Level of Service	H	
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	43	274	17	47	353
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	47	298	18	51	384
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	793	307			316	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	793	307			316	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	94			96	
cM capacity (veh/h)	343	733			1244	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	63	316	51	384
Volume Left	16	0	51	0
Volume Right	47	18	0	0
cSH	566	1700	1244	1700
Volume to Capacity	0.11	0.19	0.04	0.23
Queue Length 95th (ft)	9	0	3	0
Control Delay (s)	12.2	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	12.2	0.0	0.9	
Approach LOS	B			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	133	49	39	140	204	154
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	145	53	42	152	222	167
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	542	305	389			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	542	305	389			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	93	96			
cM capacity (veh/h)	483	734	1169			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	198	42	152	389
Volume Left	145	42	0	0
Volume Right	53	0	0	167
cSH	661	1169	1700	1700
Volume to Capacity	0.30	0.04	0.09	0.23
Queue Length 95th (ft)	31	3	0	0
Control Delay (s)	14.2	8.2	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.2	1.8		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	54	1200	2028	141	94	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.93	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	3505		1692	1504
Flt Permitted	0.95	1.00	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	3505		1692	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	1304	2204	153	102	253
RTOR Reduction (vph)	0	0	5	0	33	69
Lane Group Flow (vph)	59	1304	2352	0	150	103
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	3.1	65.4	58.3		12.1	12.1
Effective Green, g (s)	3.1	65.4	58.3		12.1	12.1
Actuated g/C Ratio	0.04	0.76	0.68		0.14	0.14
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	64	2707	2389		239	212
v/s Ratio Prot	c0.03	0.37	c0.67		c0.09	
v/s Ratio Perm						0.07
v/c Ratio	0.92	0.48	0.98		0.63	0.49
Uniform Delay, d1	41.1	3.7	13.2		34.6	33.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	84.8	0.1	14.8		5.0	1.8
Delay (s)	125.9	3.9	28.0		39.6	35.6
Level of Service	F	A	C		D	D
Approach Delay (s)		9.2	28.0		37.7	
Approach LOS		A	C		D	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1238	63	449	1870	13	203	5	540	3	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1346	68	488	2033	14	221	5	587	3	3	0
RTOR Reduction (vph)	0	0	41	0	0	6	0	0	361	0	0	0
Lane Group Flow (vph)	5	1346	27	488	2033	8	0	226	226	3	3	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.0	31.3	31.3	16.0	46.3	46.3		14.3	30.3	1.0	1.0	
Effective Green, g (s)	1.0	31.3	31.3	16.0	46.3	46.3		14.3	30.3	1.0	1.0	
Actuated g/C Ratio	0.01	0.40	0.40	0.20	0.59	0.59		0.18	0.39	0.01	0.01	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	43	2024	630	698	2995	932		323	1216	21	22	
v/s Ratio Prot	0.00	0.26		c0.14	c0.40			c0.13	0.04	c0.00	0.00	
v/s Ratio Perm			0.02			0.01			0.04			
v/c Ratio	0.12	0.67	0.04	0.70	0.68	0.01		0.70	0.19	0.14	0.14	
Uniform Delay, d1	38.4	19.4	14.5	29.1	11.1	6.7		30.1	16.0	38.4	38.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.8	0.0	3.1	0.6	0.0		6.5	0.1	3.1	2.8	
Delay (s)	39.6	20.2	14.5	32.1	11.7	6.7		36.6	16.1	41.5	41.2	
Level of Service	D	C	B	C	B	A		D	B	D	D	
Approach Delay (s)		20.0			15.6			21.8			41.3	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	943	774	114	1208	10	1083	33	162	5	9	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	1025	841	124	1313	11	1177	36	176	5	10	39
RTOR Reduction (vph)	0	0	266	0	0	8	0	0	97	0	0	37
Lane Group Flow (vph)	77	1025	575	124	1313	3	1177	36	79	5	10	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	4.0	23.1	53.2	5.0	24.1	24.1	30.1	30.1	35.1	3.6	3.6	3.6
Effective Green, g (s)	4.0	23.1	53.2	5.0	24.1	24.1	30.1	30.1	35.1	3.6	3.6	3.6
Actuated g/C Ratio	0.05	0.30	0.68	0.06	0.31	0.31	0.39	0.39	0.45	0.05	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	91	1509	1905	220	1575	490	1328	720	795	81	86	73
v/s Ratio Prot	c0.04	0.20	0.12	0.04	c0.26		c0.34	0.02	0.01	0.00	c0.01	
v/s Ratio Perm			0.09			0.00			0.04			0.00
v/c Ratio	0.85	0.68	0.30	0.56	0.83	0.01	0.89	0.05	0.10	0.06	0.12	0.02
Uniform Delay, d1	36.6	24.1	4.9	35.3	25.0	18.6	22.3	14.9	12.3	35.5	35.6	35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.9	1.2	0.1	3.3	4.0	0.0	7.5	0.0	0.1	0.3	0.6	0.1
Delay (s)	84.5	25.3	5.0	38.6	28.9	18.6	29.7	14.9	12.3	35.8	36.2	35.6
Level of Service	F	C	A	D	C	B	C	B	B	D	D	D
Approach Delay (s)		18.9			29.7			27.1			35.7	
Approach LOS		B			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	74.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	302	578	856	277	116	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	328	628	930	301	126	387
RTOR Reduction (vph)	0	0	0	132	0	86
Lane Group Flow (vph)	328	628	930	169	126	301
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	8.2	51.6	39.4	39.4	10.4	18.6
Effective Green, g (s)	8.2	51.6	39.4	39.4	10.4	18.6
Actuated g/C Ratio	0.12	0.74	0.56	0.56	0.15	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	402	1373	1048	891	262	511
v/s Ratio Prot	c0.10	0.34	c0.50		0.07	c0.07
v/s Ratio Perm				0.11		0.12
v/c Ratio	0.82	0.46	0.89	0.19	0.48	0.59
Uniform Delay, d1	30.2	3.6	13.4	7.5	27.3	22.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	0.2	9.2	0.1	1.4	1.7
Delay (s)	42.2	3.9	22.6	7.6	28.7	24.1
Level of Service	D	A	C	A	C	C
Approach Delay (s)		17.0	18.9		25.2	
Approach LOS		B	B		C	

Intersection Summary				
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	73.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	592	0	3	881	171	3	1	1	130	0	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1760			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1760			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	643	0	3	958	186	3	1	1	141	0	266
RTOR Reduction (vph)	0	0	0	0	0	63	0	1	0	0	0	222
Lane Group Flow (vph)	123	643	0	3	958	123	0	4	0	0	141	44
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	5.1	32.5		0.6	28.0	28.0		5.9			10.9	10.9
Effective Green, g (s)	5.1	32.5		0.6	28.0	28.0		5.9			10.9	10.9
Actuated g/C Ratio	0.08	0.49		0.01	0.42	0.42		0.09			0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	136	1745		16	1503	672		157			292	261
v/s Ratio Prot	c0.07	0.18		0.00	c0.27			c0.00			c0.08	
v/s Ratio Perm						0.08						0.03
v/c Ratio	0.90	0.37		0.19	0.64	0.18		0.03			0.48	0.17
Uniform Delay, d1	30.2	10.3		32.4	14.9	11.8		27.4			24.9	23.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	49.1	0.1		5.6	0.9	0.1		0.1			1.3	0.3
Delay (s)	79.3	10.5		38.0	15.8	12.0		27.4			26.2	23.9
Level of Service	E	B		D	B	B		C			C	C
Approach Delay (s)		21.5			15.3			27.4			24.7	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	561	7	7	729	3	11	1	3	7	2	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.96	1.00
Satd. Flow (prot)	1770	1859		1770	1862			1750			1791	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.86			0.86	1.00
Satd. Flow (perm)	1770	1859		1770	1862			1563			1611	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	610	8	8	792	3	12	1	3	8	2	384
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	182
Lane Group Flow (vph)	177	618	0	8	795	0	0	14	0	0	10	202
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	8.2	40.5		0.7	33.0			12.0			12.0	12.0
Effective Green, g (s)	8.2	40.5		0.7	33.0			12.0			12.0	12.0
Actuated g/C Ratio	0.13	0.62		0.01	0.51			0.18			0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	222	1154		19	942			287			296	291
v/s Ratio Prot	c0.10	0.33		0.00	c0.43							
v/s Ratio Perm								0.01			0.01	c0.13
v/c Ratio	0.80	0.54		0.42	0.84			0.05			0.03	0.69
Uniform Delay, d1	27.7	7.0		32.0	13.9			21.9			21.8	24.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	17.8	0.5		14.4	7.0			0.1			0.0	7.0
Delay (s)	45.5	7.5		46.4	20.9			22.0			21.9	31.9
Level of Service	D	A		D	C			C			C	C
Approach Delay (s)		15.9			21.1			22.0			31.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	505	35	2	556	64	117	33	5	69	25	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1788			1721	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.73			0.84	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1351			1472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	549	38	2	604	70	127	36	5	75	27	73
RTOR Reduction (vph)	0	0	22	0	0	40	0	2	0	0	43	0
Lane Group Flow (vph)	15	549	16	2	604	30	0	166	0	0	132	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.5	17.8	17.8	0.5	17.8	17.8		10.9			10.9	
Effective Green, g (s)	0.5	17.8	17.8	0.5	17.8	17.8		10.9			10.9	
Actuated g/C Ratio	0.01	0.43	0.43	0.01	0.43	0.43		0.26			0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	21	804	683	21	804	683		357			389	
v/s Ratio Prot	c0.01	0.29		0.00	c0.32							
v/s Ratio Perm			0.01			0.02		c0.12			0.09	
v/c Ratio	0.71	0.68	0.02	0.10	0.75	0.04		0.46			0.34	
Uniform Delay, d1	20.3	9.4	6.7	20.1	9.8	6.8		12.7			12.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	75.0	2.4	0.0	2.0	4.0	0.0		1.0			0.5	
Delay (s)	95.3	11.8	6.7	22.1	13.8	6.8		13.7			12.8	
Level of Service	F	B	A	C	B	A		B			B	
Approach Delay (s)		13.6			13.1			13.7			12.8	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	50.3%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	4	6	602	516	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	4	7	654	561	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1234	566	572			
vC1, stage 1 conf vol	566					
vC2, stage 2 conf vol	667					
vCu, unblocked vol	1234	566	572			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	410	523	1001			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	11	7	654	572
Volume Left	7	7	0	0
Volume Right	4	0	0	11
cSH	449	1001	1700	1700
Volume to Capacity	0.02	0.01	0.38	0.34
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	13.2	8.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.2	0.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	0	11	0	0	1	7	577	1	11	478	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.86		1.00	1.00		1.00	1.00	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1715			1611		1770	1862		1770	1856	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1768			1611		1770	1862		1770	1856	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	0	12	0	0	1	8	627	1	12	520	12
RTOR Reduction (vph)	0	31	0	0	1	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	0	0	8	628	0	12	531	0
Turn Type	Perm	NA			NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		1.7			1.7		0.6	27.4		0.6	27.4	
Effective Green, g (s)		1.7			1.7		0.6	27.4		0.6	27.4	
Actuated g/C Ratio		0.04			0.04		0.01	0.66		0.01	0.66	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		72			65		25	1223		25	1219	
v/s Ratio Prot					0.00		0.00	c0.34		c0.01	0.29	
v/s Ratio Perm		c0.00										
v/c Ratio		0.02			0.00		0.32	0.51		0.48	0.44	
Uniform Delay, d1		19.2			19.2		20.3	3.7		20.4	3.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.0		7.3	0.4		13.8	0.3	
Delay (s)		19.3			19.2		27.6	4.1		34.2	3.7	
Level of Service		B			B		C	A		C	A	
Approach Delay (s)		19.3			19.2			4.4			4.4	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.48			
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	45.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	147	32	76	410	199	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	160	35	83	446	216	374
RTOR Reduction (vph)	0	29	0	0	0	210
Lane Group Flow (vph)	160	6	83	446	216	164
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	5.6	5.6	2.3	21.8	15.5	15.5
Effective Green, g (s)	5.6	5.6	2.3	21.8	15.5	15.5
Actuated g/C Ratio	0.16	0.16	0.06	0.62	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	543	250	115	1147	815	693
v/s Ratio Prot			c0.05	c0.24	0.12	
v/s Ratio Perm	c0.05	0.00				0.10
v/c Ratio	0.29	0.02	0.72	0.39	0.27	0.24
Uniform Delay, d1	13.2	12.6	16.2	3.4	6.3	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	19.9	0.2	0.2	0.2
Delay (s)	13.5	12.6	36.1	3.7	6.5	6.4
Level of Service	B	B	D	A	A	A
Approach Delay (s)	13.3			8.8	6.4	
Approach LOS	B			A	A	

Intersection Summary				
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	32.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	26	71	405	12	18	140
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	77	440	13	20	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	638	447			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	638	447			453	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	87			98	
cM capacity (veh/h)	433	612			1107	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	105	453	20	152
Volume Left	28	0	20	0
Volume Right	77	13	0	0
cSH	551	1700	1107	1700
Volume to Capacity	0.19	0.27	0.02	0.09
Queue Length 95th (ft)	18	0	1	0
Control Delay (s)	13.1	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	13.1	0.0	0.9	
Approach LOS	B			

Intersection Summary				
Average Delay		2.1		
Intersection Capacity Utilization		34.5%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	92	52	68	299	142	101
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	57	74	325	154	110
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	682	209	264			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	682	209	264			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	93	94			
cM capacity (veh/h)	392	831	1300			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	157	74	325	264
Volume Left	100	74	0	0
Volume Right	57	0	0	110
cSH	613	1300	1700	1700
Volume to Capacity	0.26	0.06	0.19	0.16
Queue Length 95th (ft)	25	5	0	0
Control Delay (s)	14.5	7.9	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.5	1.5		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		3.5		
Intersection Capacity Utilization		32.5%	ICU Level of Service	A
Analysis Period (min)		15		

13: Jamacha Blvd. & Sweetwater Springs Blvd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	45	405	22	11	13	757	525	28	15	304	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799	1583	1770	1863	1583	3433	3513		1770	1863	1583
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1799	1583	1770	1863	1583	3433	3513		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	49	440	24	12	14	823	571	30	16	330	152
RTOR Reduction (vph)	0	0	256	0	0	13	0	3	0	0	0	107
Lane Group Flow (vph)	0	170	184	24	12	1	823	598	0	16	330	45
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		10.9	27.2	2.6	2.6	4.0	16.3	34.0		1.4	19.1	19.1
Effective Green, g (s)		10.9	27.2	2.6	2.6	4.0	16.3	34.0		1.4	19.1	19.1
Actuated g/C Ratio		0.17	0.42	0.04	0.04	0.06	0.25	0.52		0.02	0.29	0.29
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		302	663	70	74	195	862	1840		38	548	465
v/s Ratio Prot		c0.09	0.07	c0.01	0.01	0.00	c0.24	0.17		0.01	c0.18	
v/s Ratio Perm			0.05			0.00						0.03
v/c Ratio		0.56	0.28	0.34	0.16	0.00	0.95	0.32		0.42	0.60	0.10
Uniform Delay, d1		24.8	12.4	30.3	30.1	28.6	23.9	8.9		31.3	19.6	16.6
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.4	0.2	2.9	1.0	0.0	20.3	0.5		7.4	4.8	0.4
Delay (s)		27.2	12.6	33.2	31.1	28.6	44.2	9.3		38.7	24.5	17.0
Level of Service		C	B	C	C	C	D	A		D	C	B
Approach Delay (s)		16.7			31.4			29.5			22.7	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	62.8%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	522	328	179	707	35	515	109	203	36	56	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	567	357	195	768	38	560	118	221	39	61	48
RTOR Reduction (vph)	0	0	223	0	0	27	0	0	131	0	0	34
Lane Group Flow (vph)	43	567	134	195	768	11	560	118	90	39	61	14
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.5	15.2	23.2	4.0	17.7	17.7	8.0	25.0	25.0	1.5	18.5	18.5
Effective Green, g (s)	1.5	15.2	23.2	4.0	17.7	17.7	8.0	25.0	25.0	1.5	18.5	18.5
Actuated g/C Ratio	0.02	0.25	0.38	0.06	0.29	0.29	0.13	0.41	0.41	0.02	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	83	1252	697	222	1458	454	445	754	641	83	558	474
v/s Ratio Prot	0.01	0.11	0.02	c0.06	c0.15		c0.16	c0.06		0.01	0.03	
v/s Ratio Perm			0.06			0.01			0.06			0.01
v/c Ratio	0.52	0.45	0.19	0.88	0.53	0.02	1.26	0.16	0.14	0.47	0.11	0.03
Uniform Delay, d1	29.7	19.7	12.9	28.6	18.5	15.8	26.9	11.7	11.6	29.7	15.6	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.3	0.1	30.0	0.3	0.0	133.5	0.4	0.5	4.2	0.4	0.1
Delay (s)	35.1	20.0	13.1	58.6	18.8	15.8	160.3	12.1	12.0	33.9	16.0	15.4
Level of Service	D	B	B	E	B	B	F	B	B	C	B	B
Approach Delay (s)		18.1			26.5			104.4			20.5	
Approach LOS		B			C			F			C	

Intersection Summary				
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	48.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	220	372	193	217	13	569	49	161	6	70	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.88			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3509		1770	1648			1818	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3509		1770	1648			1818	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	239	404	210	236	14	618	53	175	7	76	15
RTOR Reduction (vph)	0	0	106	0	3	0	0	75	0	0	5	0
Lane Group Flow (vph)	8	239	298	210	247	0	618	153	0	0	93	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.7	25.2	91.8	20.4	44.9		66.6	66.6			12.1	
Effective Green, g (s)	0.7	25.2	91.8	20.4	44.9		66.6	66.6			12.1	
Actuated g/C Ratio	0.00	0.18	0.65	0.15	0.32		0.47	0.47			0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	8	334	1080	257	1122		840	782			156	
v/s Ratio Prot	0.00	c0.13	0.13	c0.12	0.07		c0.35	0.09			c0.05	
v/s Ratio Perm			0.06									
v/c Ratio	1.00	0.72	0.28	0.82	0.22		0.74	0.20			0.60	
Uniform Delay, d1	69.8	54.2	10.2	58.1	34.9		29.7	21.3			61.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	318.2	7.1	0.1	17.9	0.1		5.7	0.6			6.1	
Delay (s)	388.0	61.3	10.4	76.0	35.0		35.4	21.9			67.8	
Level of Service	F	E	B	E	C		D	C			E	
Approach Delay (s)		33.7			53.7			31.8			67.8	
Approach LOS		C			D			C			E	

Intersection Summary				
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	140.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	70.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	84	464	289	97	322	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	504	314	105	350	336
RTOR Reduction (vph)	0	417	0	69	0	0
Lane Group Flow (vph)	91	87	314	36	350	336
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.2	9.2	18.4	18.4	13.8	36.2
Effective Green, g (s)	9.2	9.2	18.4	18.4	13.8	36.2
Actuated g/C Ratio	0.17	0.17	0.34	0.34	0.26	0.68
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	304	272	641	545	457	1262
v/s Ratio Prot	0.05		c0.17		c0.20	0.18
v/s Ratio Perm		c0.05		0.02		
v/c Ratio	0.30	0.32	0.49	0.07	0.77	0.27
Uniform Delay, d1	19.3	19.4	13.8	11.7	18.3	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.7	2.7	0.2	7.5	0.5
Delay (s)	19.8	20.0	16.5	12.0	25.8	3.9
Level of Service	B	C	B	B	C	A
Approach Delay (s)	20.0		15.3			15.1
Approach LOS	C		B			B

Intersection Summary				
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	50.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	18	259	457	91	40	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	282	497	99	43	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	497				817	497
vC1, stage 1 conf vol					497	
vC2, stage 2 conf vol					321	
vCu, unblocked vol	497				817	497
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	94
cM capacity (veh/h)	1067				536	573

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	20	282	497	99	76
Volume Left	20	0	0	0	43
Volume Right	0	0	0	99	33
cSH	1067	1700	1700	1700	552
Volume to Capacity	0.02	0.17	0.29	0.06	0.14
Queue Length 95th (ft)	1	0	0	0	12
Control Delay (s)	8.4	0.0	0.0	0.0	12.6
Lane LOS	A				B
Approach Delay (s)	0.5		0.0		12.6
Approach LOS					B

Intersection Summary				
Average Delay		1.2		
Intersection Capacity Utilization		34.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	104	7	191	326	9	184
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	8	208	354	10	200
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			121		886	117
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			121		886	117
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		96	79
cM capacity (veh/h)			1467		270	935

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	121	208	354	210
Volume Left	0	208	0	10
Volume Right	8	0	0	200
cSH	1700	1467	1700	839
Volume to Capacity	0.07	0.14	0.21	0.25
Queue Length 95th (ft)	0	12	0	25
Control Delay (s)	0.0	7.9	0.0	10.7
Lane LOS		A		B
Approach Delay (s)	0.0	2.9		10.7
Approach LOS				B

Intersection Summary				
Average Delay		4.3		
Intersection Capacity Utilization		35.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	77	16	9	2	2	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	17	10	2	2	33

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	101	12	35
Volume Left (vph)	84	0	2
Volume Right (vph)	0	2	33
Hadj (s)	0.20	-0.08	-0.52
Departure Headway (s)	4.2	4.0	3.6
Degree Utilization, x	0.12	0.01	0.04
Capacity (veh/h)	849	885	951
Control Delay (s)	7.7	7.0	6.8
Approach Delay (s)	7.7	7.0	6.8
Approach LOS	A	A	A

Intersection Summary			
Delay		7.4	
Level of Service		A	
Intersection Capacity Utilization		21.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	737	3	2	1126	7	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	801	3	2	1224	8	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			804		2031	803
vC1, stage 1 conf vol					803	
vC2, stage 2 conf vol					1228	
vCu, unblocked vol			804		2031	803
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	98
cM capacity (veh/h)			820		234	384

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	804	1226	15
Volume Left	0	2	8
Volume Right	3	0	8
cSH	1700	820	291
Volume to Capacity	0.47	0.00	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.0	0.1	18.1
Lane LOS		A	C
Approach Delay (s)	0.0	0.1	18.1
Approach LOS			C

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		70.8%	ICU Level of Service C
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	164	2290	1803	183	205	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3490		1761	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3490		1761	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	2489	1960	199	223	171
RTOR Reduction (vph)	0	0	8	0	3	128
Lane Group Flow (vph)	178	2489	2151	0	237	26
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	9.0	66.0	53.0		14.8	14.8
Effective Green, g (s)	9.0	66.0	53.0		14.8	14.8
Actuated g/C Ratio	0.10	0.74	0.60		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	179	2630	2082		293	250
v/s Ratio Prot	0.10	c0.70	c0.62		c0.13	
v/s Ratio Perm						0.02
v/c Ratio	0.99	0.95	1.03		0.81	0.10
Uniform Delay, d1	39.9	9.9	17.9		35.6	31.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	65.3	8.2	28.8		15.0	0.2
Delay (s)	105.2	18.0	46.7		50.6	31.6
Level of Service	F	B	D		D	C
Approach Delay (s)		23.8	46.7		43.2	
Approach LOS		C	D		D	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	2337	128	583	1867	6	113	2	730	8	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1775	2787	1681	1713	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1775	2787	1681	1713	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2540	139	634	2029	7	123	2	793	9	2	1
RTOR Reduction (vph)	0	0	65	0	0	2	0	0	224	0	0	0
Lane Group Flow (vph)	5	2540	74	634	2029	5	0	125	569	5	6	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	70.9	70.9	30.0	99.8	99.8		13.4	43.4	2.4	2.4	2.4
Effective Green, g (s)	1.1	70.9	70.9	30.0	99.8	99.8		13.4	43.4	2.4	2.4	2.4
Actuated g/C Ratio	0.01	0.53	0.53	0.23	0.75	0.75		0.10	0.33	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	28	2716	845	776	3824	1190		179	995	30	30	28
v/s Ratio Prot	0.00	c0.50		c0.18	0.40			c0.07	c0.13	0.00	c0.00	
v/s Ratio Perm			0.05			0.00			0.07			0.00
v/c Ratio	0.18	0.94	0.09	0.82	0.53	0.00		0.70	0.57	0.17	0.20	0.04
Uniform Delay, d1	65.4	28.8	15.1	48.7	6.8	4.1		57.7	37.0	64.2	64.2	64.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	6.9	0.0	6.7	0.1	0.0		11.3	0.8	2.6	3.3	0.5
Delay (s)	68.4	35.6	15.1	55.4	6.9	4.1		69.0	37.8	66.8	67.5	64.5
Level of Service	E	D	B	E	A	A		E	D	E	E	E
Approach Delay (s)		34.6			18.4			42.0			66.9	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	132.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	1738	1240	143	1224	25	1146	26	150	29	32	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	1889	1348	155	1330	27	1246	28	163	32	35	86
RTOR Reduction (vph)	0	0	193	0	0	18	0	0	87	0	0	81
Lane Group Flow (vph)	123	1889	1155	155	1330	9	1246	28	76	32	35	5
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.1	52.0	110.0	8.0	46.9	46.9	58.0	58.0	66.0	8.1	8.1	8.1
Effective Green, g (s)	13.1	52.0	110.0	8.0	46.9	46.9	58.0	58.0	66.0	8.1	8.1	8.1
Actuated g/C Ratio	0.09	0.37	0.77	0.06	0.33	0.33	0.41	0.41	0.46	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	163	1860	2157	193	1678	522	1401	760	779	100	106	90
v/s Ratio Prot	c0.07	c0.37	0.22	0.05	0.26		c0.36	0.02	0.01	0.02	c0.02	
v/s Ratio Perm			0.20			0.01			0.04			0.00
v/c Ratio	0.75	1.02	0.54	0.80	0.79	0.02	0.89	0.04	0.10	0.32	0.33	0.05
Uniform Delay, d1	62.9	45.0	6.2	66.3	43.2	32.1	39.1	25.3	21.3	64.4	64.4	63.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.8	24.8	0.3	20.9	2.7	0.0	7.3	0.0	0.1	1.9	1.8	0.3
Delay (s)	80.8	69.9	6.5	87.2	45.8	32.1	46.3	25.3	21.4	66.2	66.2	63.6
Level of Service	F	E	A	F	D	C	D	C	C	E	E	E
Approach Delay (s)		44.8			49.8			43.1			64.8	
Approach LOS		D			D			D			E	

Intersection Summary				
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	142.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	87.0%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	84	1287	924	46	67	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1399	1004	50	73	118
RTOR Reduction (vph)	0	0	0	14	0	101
Lane Group Flow (vph)	91	1399	1004	36	73	17
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	4.0	73.3	65.3	65.3	9.1	13.1
Effective Green, g (s)	4.0	73.3	65.3	65.3	9.1	13.1
Actuated g/C Ratio	0.04	0.81	0.72	0.72	0.10	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	151	1510	1345	1143	178	299
v/s Ratio Prot	0.03	c0.75	0.54		c0.04	0.00
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.60	0.93	0.75	0.03	0.41	0.06
Uniform Delay, d1	42.4	6.5	7.6	3.6	38.1	33.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	10.0	2.3	0.0	1.5	0.1
Delay (s)	49.0	16.5	9.9	3.6	39.7	33.4
Level of Service	D	B	A	A	D	C
Approach Delay (s)		18.5	9.6		35.8	
Approach LOS		B	A		D	

Intersection Summary				
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.1%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	1209	1	5	842	159	1	3	18	275	5	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3455			1650			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3455			1650			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	1314	1	5	915	173	1	3	20	299	5	112
RTOR Reduction (vph)	0	0	0	0	15	0	0	19	0	0	0	73
Lane Group Flow (vph)	115	1315	0	5	1073	0	0	5	0	0	304	39
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	10.1	47.1		0.7	37.7			6.1			21.2	21.2
Effective Green, g (s)	10.1	47.1		0.7	37.7			6.1			21.2	21.2
Actuated g/C Ratio	0.11	0.52		0.01	0.41			0.07			0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	196	1829		13	1429			110			413	368
v/s Ratio Prot	c0.06	c0.37		0.00	0.31			c0.00			c0.17	
v/s Ratio Perm												0.02
v/c Ratio	0.59	0.72		0.38	0.75			0.05			0.74	0.11
Uniform Delay, d1	38.5	16.9		45.0	22.7			39.8			32.4	27.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	4.4	1.4		17.9	2.3			0.2			6.7	0.1
Delay (s)	42.9	18.3		62.9	25.0			40.0			39.1	27.6
Level of Service	D	B		E	C			D			D	C
Approach Delay (s)		20.3			25.2			40.0			36.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	91.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	68.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	331	1118	14	3	836	11	6	1	3	9	1	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.96	1.00
Satd. Flow (prot)	1770	1859		1770	1859			1739			1782	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.85			0.78	1.00
Satd. Flow (perm)	1770	1859		1770	1859			1517			1459	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	1215	15	3	909	12	7	1	3	10	1	205
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	187
Lane Group Flow (vph)	360	1230	0	3	921	0	0	8	0	0	11	18
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	18.0	64.6		0.8	47.4			7.5			7.5	7.5
Effective Green, g (s)	18.0	64.6		0.8	47.4			7.5			7.5	7.5
Actuated g/C Ratio	0.21	0.76		0.01	0.56			0.09			0.09	0.09
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	375	1414		16	1037			134			128	139
v/s Ratio Prot	c0.20	c0.66		0.00	0.50							
v/s Ratio Perm								0.01			0.01	c0.01
v/c Ratio	0.96	0.87		0.19	0.89			0.06			0.09	0.13
Uniform Delay, d1	33.1	7.2		41.7	16.4			35.5			35.6	35.7
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	35.6	6.0		5.6	9.4			0.2			0.3	0.4
Delay (s)	68.7	13.2		47.4	25.8			35.7			35.8	36.1
Level of Service	E	B		D	C			D			D	D
Approach Delay (s)		25.7			25.8			35.7			36.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	950	121	3	757	71	69	38	22	92	25	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1772			1765	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.79			0.73	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1434			1331	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1033	132	3	823	77	75	41	24	100	27	23
RTOR Reduction (vph)	0	0	26	0	0	30	0	10	0	0	8	0
Lane Group Flow (vph)	29	1033	106	3	823	47	0	130	0	0	142	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.3	40.8	40.8	0.6	40.1	40.1		12.0			12.0	
Effective Green, g (s)	1.3	40.8	40.8	0.6	40.1	40.1		12.0			12.0	
Actuated g/C Ratio	0.02	0.62	0.62	0.01	0.61	0.61		0.18			0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	35	1162	987	16	1142	970		263			244	
v/s Ratio Prot	c0.02	c0.55		0.00	0.44							
v/s Ratio Perm			0.07			0.03		0.09			c0.11	
v/c Ratio	0.83	0.89	0.11	0.19	0.72	0.05		0.50			0.58	
Uniform Delay, d1	31.9	10.4	5.0	32.2	8.8	5.0		24.0			24.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	84.5	8.6	0.0	5.6	2.3	0.0		1.5			3.5	
Delay (s)	116.4	18.9	5.0	37.8	11.0	5.1		25.4			27.9	
Level of Service	F	B	A	D	B	A		C			C	
Approach Delay (s)		19.8			10.6			25.4			27.9	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	67.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	27	4	809	1017	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	29	4	879	1105	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2009	1121	1136			
vC1, stage 1 conf vol	1121					
vC2, stage 2 conf vol	888					
vCu, unblocked vol	2009	1121	1136			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	88	99			
cM capacity (veh/h)	247	251	615			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	50	4	879	1136
Volume Left	21	4	0	0
Volume Right	29	0	0	30
cSH	249	615	1700	1700
Volume to Capacity	0.20	0.01	0.52	0.67
Queue Length 95th (ft)	18	1	0	0
Control Delay (s)	23.0	10.9	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	23.0	0.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	0	16	1	0	4	20	816	0	2	1029	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1681			1645		1770	1863		1770	1860	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1715			1662		1770	1863		1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	0	17	1	0	4	22	887	0	2	1118	13
RTOR Reduction (vph)	0	28	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	0	22	887	0	2	1131	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		2.0			2.0		1.5	61.9		0.8	61.2	
Effective Green, g (s)		2.0			2.0		1.5	61.9		0.8	61.2	
Actuated g/C Ratio		0.03			0.03		0.02	0.81		0.01	0.80	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		44			43		34	1503		18	1484	
v/s Ratio Prot							c0.01	0.48		0.00	c0.61	
v/s Ratio Perm		c0.00			0.00							
v/c Ratio		0.02			0.00		0.65	0.59		0.11	0.76	
Uniform Delay, d1		36.4			36.4		37.3	2.7		37.6	4.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0		35.3	0.6		2.7	2.4	
Delay (s)		36.5			36.4		72.6	3.4		40.3	6.4	
Level of Service		D			D		E	A		D	A	
Approach Delay (s)		36.5			36.4			5.0			6.4	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	620	136	116	186	499	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	148	126	202	542	575
RTOR Reduction (vph)	0	105	0	0	0	356
Lane Group Flow (vph)	674	43	126	202	542	219
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	14.0	14.0	4.1	26.6	18.5	18.5
Effective Green, g (s)	14.0	14.0	4.1	26.6	18.5	18.5
Actuated g/C Ratio	0.29	0.29	0.08	0.55	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	988	456	149	1019	709	602
v/s Ratio Prot			c0.07	0.11	c0.29	
v/s Ratio Perm	c0.20	0.03				0.14
v/c Ratio	0.68	0.09	0.85	0.20	0.76	0.36
Uniform Delay, d1	15.3	12.7	21.9	5.6	13.1	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	33.3	0.1	4.9	0.4
Delay (s)	17.3	12.7	55.2	5.7	18.1	11.2
Level of Service	B	B	E	A	B	B
Approach Delay (s)	16.5			24.7	14.5	
Approach LOS	B			C	B	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	33	317	22	71	487
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	36	345	24	77	529
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1040	357			368	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1040	357			368	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	95			94	
cM capacity (veh/h)	238	688			1190	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	51	368	77	529
Volume Left	15	0	77	0
Volume Right	36	24	0	0
cSH	440	1700	1190	1700
Volume to Capacity	0.12	0.22	0.06	0.31
Queue Length 95th (ft)	10	0	5	0
Control Delay (s)	14.2	0.0	8.2	0.0
Lane LOS	B		A	
Approach Delay (s)	14.2	0.0	1.0	
Approach LOS	B			

Intersection Summary				
Average Delay		1.3		
Intersection Capacity Utilization		35.6%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	142	95	42	110	380	171
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	103	46	120	413	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	717	506	599			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	717	506	599			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	82	95			
cM capacity (veh/h)	378	566	978			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	258	46	120	599
Volume Left	154	46	0	0
Volume Right	103	0	0	186
cSH	631	978	1700	1700
Volume to Capacity	0.41	0.05	0.07	0.35
Queue Length 95th (ft)	50	4	0	0
Control Delay (s)	17.7	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.7	2.4		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		4.9		
Intersection Capacity Utilization		49.4%	ICU Level of Service	A
Analysis Period (min)		15		

13: Jamacha Blvd. & Sweetwater Springs Blvd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	12	464	20	39	18	341	567	7	3	510	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1780	1583	1770	1863	1583	3433	3532		1770	1863	1583
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1780	1583	1770	1863	1583	3433	3532		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	13	504	22	42	20	371	616	8	3	554	139
RTOR Reduction (vph)	0	0	302	0	0	18	0	1	0	0	0	85
Lane Group Flow (vph)	0	191	202	22	42	2	371	623	0	3	554	54
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		11.8	21.0	4.3	4.3	5.7	9.2	34.0		1.4	26.2	26.2
Effective Green, g (s)		11.8	21.0	4.3	4.3	5.7	9.2	34.0		1.4	26.2	26.2
Actuated g/C Ratio		0.17	0.31	0.06	0.06	0.08	0.14	0.50		0.02	0.39	0.39
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		311	492	112	118	227	467	1779		36	723	614
v/s Ratio Prot		c0.11	0.06	0.01	c0.02	0.00	c0.11	0.18		0.00	c0.30	
v/s Ratio Perm			0.07			0.00						0.03
v/c Ratio		0.61	0.41	0.20	0.36	0.01	0.79	0.35		0.08	0.77	0.09
Uniform Delay, d1		25.7	18.4	30.0	30.3	28.3	28.2	10.1		32.4	18.0	13.1
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.6	0.6	0.9	1.8	0.0	9.0	0.5		1.0	7.6	0.3
Delay (s)		29.3	18.9	30.8	32.1	28.3	37.3	10.6		33.4	25.6	13.4
Level of Service		C	B	C	C	C	D	B		C	C	B
Approach Delay (s)		21.8			30.9			20.6			23.2	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	68.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	736	604	219	709	82	508	83	159	145	124	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	800	657	238	771	89	552	90	173	158	135	68
RTOR Reduction (vph)	0	0	282	0	0	67	0	0	115	0	0	49
Lane Group Flow (vph)	158	800	375	238	771	22	552	90	58	158	135	19
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	14.8	22.8	4.0	14.8	14.8	8.0	20.1	20.1	4.7	16.8	16.8
Effective Green, g (s)	4.0	14.8	22.8	4.0	14.8	14.8	8.0	20.1	20.1	4.7	16.8	16.8
Actuated g/C Ratio	0.07	0.25	0.38	0.07	0.25	0.25	0.13	0.34	0.34	0.08	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	1262	711	230	1262	393	460	628	533	270	525	446
v/s Ratio Prot	0.05	c0.16	0.07	c0.07	0.15		c0.16	c0.05		0.05	c0.07	
v/s Ratio Perm			0.17			0.01			0.04			0.01
v/c Ratio	0.69	0.63	0.53	1.03	0.61	0.06	1.20	0.14	0.11	0.59	0.26	0.04
Uniform Delay, d1	27.2	20.0	14.2	27.8	19.8	17.1	25.8	13.8	13.6	26.5	16.6	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	1.1	0.7	68.7	0.9	0.1	109.3	0.5	0.4	3.2	1.2	0.2
Delay (s)	35.4	21.0	14.9	96.5	20.7	17.1	135.1	14.2	14.0	29.7	17.8	15.7
Level of Service	D	C	B	F	C	B	F	B	B	C	B	B
Approach Delay (s)		20.0			36.9			96.1			22.6	
Approach LOS		B			D			F			C	

Intersection Summary				
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	60.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	396	533	148	331	5	314	20	99	8	25	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.88			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	3532		1770	1631			1767	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1583	1770	3532		1770	1631			1767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	430	579	161	360	5	341	22	108	9	27	17
RTOR Reduction (vph)	0	0	165	0	1	0	0	66	0	0	12	0
Lane Group Flow (vph)	12	430	414	161	364	0	341	64	0	0	41	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	1.7	35.5	82.0	16.0	49.8		46.5	46.5			6.9	
Effective Green, g (s)	1.7	35.5	82.0	16.0	49.8		46.5	46.5			6.9	
Actuated g/C Ratio	0.01	0.29	0.68	0.13	0.41		0.38	0.38			0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	24	547	1126	234	1454		680	627			100	
v/s Ratio Prot	0.01	c0.23	0.14	c0.09	0.10		c0.19	0.04			c0.02	
v/s Ratio Perm			0.12									
v/c Ratio	0.50	0.79	0.37	0.69	0.25		0.50	0.10			0.41	
Uniform Delay, d1	59.2	39.2	8.3	50.1	23.3		28.4	23.8			55.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	15.4	7.3	0.2	8.1	0.1		2.6	0.3			2.7	
Delay (s)	74.6	46.5	8.5	58.2	23.4		31.0	24.1			57.7	
Level of Service	E	D	A	E	C		C	C			E	
Approach Delay (s)		25.3			34.1			29.1			57.7	
Approach LOS		C			C			C			E	

Intersection Summary				
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	24	174	221	24	310	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	189	240	26	337	420
RTOR Reduction (vph)	0	168	0	16	0	0
Lane Group Flow (vph)	26	21	240	10	337	420
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	5.6	5.6	18.9	18.9	13.5	36.4
Effective Green, g (s)	5.6	5.6	18.9	18.9	13.5	36.4
Actuated g/C Ratio	0.11	0.11	0.38	0.38	0.27	0.73
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	198	177	704	598	477	1356
v/s Ratio Prot	c0.01		0.13		c0.19	c0.23
v/s Ratio Perm		0.01		0.01		
v/c Ratio	0.13	0.12	0.34	0.02	0.71	0.31
Uniform Delay, d1	20.0	20.0	11.1	9.7	16.5	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	1.3	0.1	4.7	0.6
Delay (s)	20.3	20.3	12.4	9.8	21.2	3.0
Level of Service	C	C	B	A	C	A
Approach Delay (s)	20.3		12.2			11.1
Approach LOS	C		B			B

Intersection Summary				
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	42.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	35	356	223	45	94	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	387	242	49	102	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	242				705	242
vC1, stage 1 conf vol					242	
vC2, stage 2 conf vol					463	
vCu, unblocked vol	242				705	242
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				82	96
cM capacity (veh/h)	1324				565	796

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	38	387	242	49	134
Volume Left	38	0	0	0	102
Volume Right	0	0	0	49	32
cSH	1324	1700	1700	1700	606
Volume to Capacity	0.03	0.23	0.14	0.03	0.22
Queue Length 95th (ft)	2	0	0	0	21
Control Delay (s)	7.8	0.0	0.0	0.0	12.6
Lane LOS	A				B
Approach Delay (s)	0.7		0.0		12.6
Approach LOS					B

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	269	1	100	193	2	121
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	292	1	109	210	2	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			293		720	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			293		720	293
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		99	82
cM capacity (veh/h)			1268		361	746

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	293	109	210	134
Volume Left	0	109	0	2
Volume Right	1	0	0	132
cSH	1700	1268	1700	734
Volume to Capacity	0.17	0.09	0.12	0.18
Queue Length 95th (ft)	0	7	0	17
Control Delay (s)	0.0	8.1	0.0	11.0
Lane LOS		A		B
Approach Delay (s)	0.0	2.8		11.0
Approach LOS				B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	37	17	23	4	6	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	18	25	4	7	51

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	59	29	58
Volume Left (vph)	40	0	7
Volume Right (vph)	0	4	51
Hadj (s)	0.17	-0.05	-0.48
Departure Headway (s)	4.2	4.0	3.6
Degree Utilization, x	0.07	0.03	0.06
Capacity (veh/h)	837	877	961
Control Delay (s)	7.5	7.2	6.8
Approach Delay (s)	7.5	7.2	6.8
Approach LOS	A	A	A

Intersection Summary			
Delay		7.2	
Level of Service		A	
Intersection Capacity Utilization		19.6%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1547	14	2	995	4	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1682	15	2	1082	4	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1697		2775	1689
vC1, stage 1 conf vol					1689	
vC2, stage 2 conf vol					1086	
vCu, unblocked vol			1697		2775	1689
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	97
cM capacity (veh/h)			375		142	116

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1697	1084	8
Volume Left	0	2	4
Volume Right	15	0	3
cSH	1700	375	129
Volume to Capacity	1.00	0.01	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.3	34.6
Lane LOS		A	D
Approach Delay (s)	0.0	0.3	34.6
Approach LOS			D

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		92.3%	ICU Level of Service F
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	201	2354	1535	154	212	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3491		1765	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3491		1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	2559	1668	167	230	121
RTOR Reduction (vph)	0	0	8	0	2	91
Lane Group Flow (vph)	218	2559	1827	0	240	18
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.0	66.0	50.0		14.9	14.9
Effective Green, g (s)	12.0	66.0	50.0		14.9	14.9
Actuated g/C Ratio	0.13	0.74	0.56		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	238	2627	1963		295	252
v/s Ratio Prot	0.12	c0.72	0.52		c0.14	
v/s Ratio Perm						0.01
v/c Ratio	0.92	0.97	0.93		0.81	0.07
Uniform Delay, d1	38.0	10.7	17.9		35.6	31.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	36.1	12.1	8.6		15.5	0.1
Delay (s)	74.1	22.7	26.4		51.1	31.3
Level of Service	E	C	C		D	C
Approach Delay (s)		26.7	26.4		45.0	
Approach LOS		C	C		D	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2429	135	509	1545	8	116	4	656	6	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1777	2787	1681	1735	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1777	2787	1681	1735	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2640	147	553	1679	9	126	4	713	7	3	3
RTOR Reduction (vph)	0	0	65	0	0	2	0	0	229	0	0	0
Lane Group Flow (vph)	2	2640	82	553	1679	7	0	130	484	5	5	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	74.0	74.0	26.7	99.6	99.6		13.6	40.3	2.4	2.4	2.4
Effective Green, g (s)	1.1	74.0	74.0	26.7	99.6	99.6		13.6	40.3	2.4	2.4	2.4
Actuated g/C Ratio	0.01	0.56	0.56	0.20	0.75	0.75		0.10	0.30	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	28	2835	882	690	3816	1188		182	930	30	31	28
v/s Ratio Prot	0.00	c0.52		c0.16	0.33			c0.07	c0.10	c0.00	0.00	
v/s Ratio Perm			0.05			0.00			0.07			0.00
v/c Ratio	0.07	0.93	0.09	0.80	0.44	0.01		0.71	0.52	0.17	0.16	0.11
Uniform Delay, d1	65.3	27.0	13.7	50.5	6.2	4.1		57.7	38.2	64.2	64.2	64.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	6.3	0.0	6.7	0.1	0.0		12.5	0.5	2.6	2.4	1.7
Delay (s)	66.4	33.3	13.7	57.1	6.2	4.1		70.2	38.7	66.8	66.6	65.8
Level of Service	E	C	B	E	A	A		E	D	E	E	E
Approach Delay (s)		32.3			18.8			43.6			66.5	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	132.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1895	1108	121	1146	21	829	25	132	27	15	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	2060	1204	132	1246	23	901	27	143	29	16	64
RTOR Reduction (vph)	0	0	342	0	0	14	0	0	96	0	0	60
Lane Group Flow (vph)	97	2060	862	132	1246	9	901	27	47	29	16	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	7.0	39.0	65.1	4.0	36.0	36.0	26.1	26.1	30.1	5.8	5.8	5.8
Effective Green, g (s)	7.0	39.0	65.1	4.0	36.0	36.0	26.1	26.1	30.1	5.8	5.8	5.8
Actuated g/C Ratio	0.08	0.43	0.72	0.04	0.40	0.40	0.29	0.29	0.33	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136	2181	1995	151	2013	626	985	534	593	112	118	101
v/s Ratio Prot	c0.05	c0.41	0.12	0.04	0.25		c0.26	0.01	0.00	c0.02	0.01	
v/s Ratio Perm			0.19			0.01			0.03			0.00
v/c Ratio	0.71	0.94	0.43	0.87	0.62	0.01	0.91	0.05	0.08	0.26	0.14	0.04
Uniform Delay, d1	41.0	24.9	5.3	43.2	22.0	16.7	31.3	23.4	20.9	40.5	40.2	39.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.2	9.3	0.2	38.9	0.6	0.0	12.6	0.0	0.1	1.2	0.5	0.2
Delay (s)	57.2	34.2	5.5	82.1	22.5	16.7	43.9	23.5	20.9	41.7	40.7	40.1
Level of Service	E	C	A	F	C	B	D	C	C	D	D	D
Approach Delay (s)		24.6			28.1			40.4			40.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	125	1164	724	45	76	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1265	787	49	83	150
RTOR Reduction (vph)	0	0	0	19	0	116
Lane Group Flow (vph)	136	1265	787	30	83	34
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	7.1	54.0	42.9	42.9	9.1	16.2
Effective Green, g (s)	7.1	54.0	42.9	42.9	9.1	16.2
Actuated g/C Ratio	0.10	0.76	0.60	0.60	0.13	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	342	1414	1124	955	226	449
v/s Ratio Prot	0.04	c0.68	0.42		c0.05	0.01
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.40	0.89	0.70	0.03	0.37	0.08
Uniform Delay, d1	30.0	6.4	9.7	5.7	28.4	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	7.7	2.0	0.0	1.0	0.1
Delay (s)	30.8	14.1	11.7	5.7	29.4	21.6
Level of Service	C	B	B	A	C	C
Approach Delay (s)		15.7	11.3		24.4	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1112	1	5	675	117	1	2	20	248	0	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3461			1638			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3461			1638			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1209	1	5	734	127	1	2	22	270	0	104
RTOR Reduction (vph)	0	0	0	0	13	0	0	20	0	0	0	77
Lane Group Flow (vph)	117	1210	0	5	848	0	0	5	0	0	270	27
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	10.7	39.1		0.7	29.1			6.1			19.2	19.2
Effective Green, g (s)	10.7	39.1		0.7	29.1			6.1			19.2	19.2
Actuated g/C Ratio	0.13	0.48		0.01	0.36			0.08			0.24	0.24
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	233	1706		15	1241			123			419	374
v/s Ratio Prot	c0.07	c0.34		0.00	0.24			c0.00			c0.15	
v/s Ratio Perm												0.02
v/c Ratio	0.50	0.71		0.33	0.68			0.04			0.64	0.07
Uniform Delay, d1	32.7	16.5		40.0	22.1			34.8			27.9	24.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.7	1.4		12.7	1.6			0.1			3.4	0.1
Delay (s)	34.4	17.9		52.6	23.7			34.9			31.3	24.1
Level of Service	C	B		D	C			C			C	C
Approach Delay (s)		19.4			23.8			34.9			29.3	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	64.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	326	972	9	2	608	10	6	2	6	8	1	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1770	1860		1770	1858			1715			1783	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.79	1.00
Satd. Flow (perm)	1770	1860		1770	1858			1554			1465	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	354	1057	10	2	661	11	7	2	7	9	1	176
RTOR Reduction (vph)	0	0	0	0	1	0	0	6	0	0	0	157
Lane Group Flow (vph)	354	1067	0	2	671	0	0	10	0	0	10	19
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	17.0	47.6		0.7	31.3			7.1			7.1	7.1
Effective Green, g (s)	17.0	47.6		0.7	31.3			7.1			7.1	7.1
Actuated g/C Ratio	0.25	0.71		0.01	0.46			0.11			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	446	1313		18	862			163			154	166
v/s Ratio Prot	c0.20	c0.57		0.00	0.36							
v/s Ratio Perm								0.01			0.01	c0.01
v/c Ratio	0.79	0.81		0.11	0.78			0.06			0.06	0.11
Uniform Delay, d1	23.6	6.8		33.0	15.1			27.1			27.2	27.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	9.4	3.9		2.7	4.5			0.2			0.2	0.3
Delay (s)	33.0	10.8		35.8	19.6			27.3			27.3	27.6
Level of Service	C	B		D	B			C			C	C
Approach Delay (s)		16.3			19.7			27.3			27.6	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.2%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	807	114	3	555	69	52	41	15	71	31	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1786			1775	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.84			0.81	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1535			1472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	877	124	3	603	75	57	45	16	77	34	18
RTOR Reduction (vph)	0	0	36	0	0	32	0	10	0	0	10	0
Lane Group Flow (vph)	18	877	88	3	603	43	0	108	0	0	119	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.6	28.9	28.9	0.6	28.9	28.9		9.4			9.4	
Effective Green, g (s)	0.6	28.9	28.9	0.6	28.9	28.9		9.4			9.4	
Actuated g/C Ratio	0.01	0.57	0.57	0.01	0.57	0.57		0.18			0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	20	1057	898	20	1057	898		283			271	
v/s Ratio Prot	c0.01	c0.47		0.00	0.32							
v/s Ratio Perm			0.06			0.03		0.07			c0.08	
v/c Ratio	0.90	0.83	0.10	0.15	0.57	0.05		0.38			0.44	
Uniform Delay, d1	25.1	9.0	5.0	24.9	7.0	4.9		18.2			18.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	153.9	5.5	0.0	3.5	0.7	0.0		0.9			1.1	
Delay (s)	179.0	14.5	5.1	28.4	7.8	4.9		19.1			19.6	
Level of Service	F	B	A	C	A	A		B			B	
Approach Delay (s)		16.3			7.6			19.1			19.6	
Approach LOS		B			A			B			B	

Intersection Summary				
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	58.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	33	31	12	576	884	52
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	34	13	626	961	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1641	989	1017			
vC1, stage 1 conf vol	989					
vC2, stage 2 conf vol	652					
vCu, unblocked vol	1641	989	1017			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	89	98			
cM capacity (veh/h)	303	299	682			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	70	13	626	1017
Volume Left	36	13	0	0
Volume Right	34	0	0	57
cSH	301	682	1700	1700
Volume to Capacity	0.23	0.02	0.37	0.60
Queue Length 95th (ft)	22	1	0	0
Control Delay (s)	20.5	10.4	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	20.5	0.2		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1	17	0	0	4	13	571	0	3	866	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.86		1.00	1.00		1.00	1.00	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1681			1611		1770	1863		1770	1860	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1712			1611		1770	1863		1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1	18	0	0	4	14	621	0	3	941	9
RTOR Reduction (vph)	0	17	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	0	0	14	621	0	3	950	0
Turn Type	Perm	NA			NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		2.2			2.2		0.6	40.3		0.6	40.3	
Effective Green, g (s)		2.2			2.2		0.6	40.3		0.6	40.3	
Actuated g/C Ratio		0.04			0.04		0.01	0.73		0.01	0.73	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		68			64		19	1362		19	1360	
v/s Ratio Prot					0.00		c0.01	0.33		0.00	c0.51	
v/s Ratio Perm		c0.01										
v/c Ratio		0.19			0.00		0.74	0.46		0.16	0.70	
Uniform Delay, d1		25.6			25.4		27.2	3.0		27.0	4.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3			0.0		88.4	0.2		3.9	1.6	
Delay (s)		26.9			25.4		115.6	3.2		30.9	5.6	
Level of Service		C			C		F	A		C	A	
Approach Delay (s)		26.9			25.4			5.7			5.7	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	61.0%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	387	85	96	198	414	437
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	92	104	215	450	475
RTOR Reduction (vph)	0	68	0	0	0	299
Lane Group Flow (vph)	421	24	104	215	450	176
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	10.4	10.4	3.0	22.0	15.0	15.0
Effective Green, g (s)	10.4	10.4	3.0	22.0	15.0	15.0
Actuated g/C Ratio	0.26	0.26	0.07	0.54	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	883	407	131	1014	691	587
v/s Ratio Prot			c0.06	0.12	c0.24	
v/s Ratio Perm	c0.12	0.01				0.11
v/c Ratio	0.48	0.06	0.79	0.21	0.65	0.30
Uniform Delay, d1	12.7	11.3	18.4	4.7	10.5	9.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	27.2	0.1	2.2	0.3
Delay (s)	13.1	11.4	45.6	4.8	12.7	9.3
Level of Service	B	B	D	A	B	A
Approach Delay (s)	12.8			18.1	11.0	
Approach LOS	B			B	B	

Intersection Summary				
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	40.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	13	40	222	27	78	430
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	43	241	29	85	467
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	893	256			271	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	893	256			271	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	94			93	
cM capacity (veh/h)	292	783			1293	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	58	271	85	467
Volume Left	14	0	85	0
Volume Right	43	29	0	0
cSH	554	1700	1293	1700
Volume to Capacity	0.10	0.16	0.07	0.27
Queue Length 95th (ft)	9	0	5	0
Control Delay (s)	12.3	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	12.3	0.0	1.2	
Approach LOS	B			

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	139	76	53	119	311	111
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	151	83	58	129	338	121
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	643	398	459			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643	398	459			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	64	87	95			
cM capacity (veh/h)	415	651	1102			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	234	58	129	459
Volume Left	151	58	0	0
Volume Right	83	0	0	121
cSH	642	1102	1700	1700
Volume to Capacity	0.36	0.05	0.08	0.27
Queue Length 95th (ft)	42	4	0	0
Control Delay (s)	16.0	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.0	2.6		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	12	502	36	61	16	345	581	7	9	412	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1780	1583	1770	1863	1583	3433	3533		1770	1863	1583
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1780	1583	1770	1863	1583	3433	3533		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	13	546	39	66	17	375	632	8	10	448	129
RTOR Reduction (vph)	0	0	320	0	0	15	0	1	0	0	0	84
Lane Group Flow (vph)	0	171	226	39	66	2	375	639	0	10	448	45
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		8.9	18.5	6.0	6.0	7.4	9.6	30.1		1.4	21.9	21.9
Effective Green, g (s)		8.9	18.5	6.0	6.0	7.4	9.6	30.1		1.4	21.9	21.9
Actuated g/C Ratio		0.14	0.30	0.10	0.10	0.12	0.15	0.48		0.02	0.35	0.35
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		253	469	170	179	289	528	1704		39	653	555
v/s Ratio Prot		c0.10	0.07	0.02	c0.04	0.00	c0.11	0.18		0.01	c0.24	
v/s Ratio Perm			0.07			0.00						0.03
v/c Ratio		0.68	0.48	0.23	0.37	0.01	0.71	0.37		0.26	0.69	0.08
Uniform Delay, d1		25.4	18.0	26.1	26.4	24.3	25.1	10.2		30.0	17.3	13.5
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		7.0	0.8	0.7	1.3	0.0	4.5	0.6		3.5	5.8	0.3
Delay (s)		32.3	18.8	26.8	27.7	24.3	29.6	10.8		33.5	23.1	13.8
Level of Service		C	B	C	C	C	C	B		C	C	B
Approach Delay (s)		22.0			26.9			17.8			21.2	
Approach LOS		C			C			B			C	

Intersection Summary				
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	66.1%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	834	515	205	693	66	463	62	118	114	127	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	907	560	223	753	72	503	67	128	124	138	72
RTOR Reduction (vph)	0	0	272	0	0	52	0	0	84	0	0	52
Lane Group Flow (vph)	128	907	288	223	753	20	503	67	44	124	138	20
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	16.2	24.2	4.0	17.0	17.0	8.0	20.9	20.9	4.0	16.9	16.9
Effective Green, g (s)	3.2	16.2	24.2	4.0	17.0	17.0	8.0	20.9	20.9	4.0	16.9	16.9
Actuated g/C Ratio	0.05	0.27	0.40	0.07	0.28	0.28	0.13	0.34	0.34	0.07	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179	1348	730	224	1414	440	449	637	541	224	515	437
v/s Ratio Prot	0.04	c0.18	0.05	c0.06	0.15		c0.15	c0.04		0.04	c0.07	
v/s Ratio Perm			0.13			0.01			0.03			0.01
v/c Ratio	0.72	0.67	0.39	1.00	0.53	0.05	1.12	0.11	0.08	0.55	0.27	0.05
Uniform Delay, d1	28.5	20.1	13.2	28.5	18.7	16.1	26.6	13.7	13.6	27.7	17.3	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	1.3	0.4	58.5	0.4	0.0	79.5	0.3	0.3	2.9	1.3	0.2
Delay (s)	41.2	21.4	13.6	87.1	19.1	16.2	106.1	14.0	13.9	30.6	18.5	16.4
Level of Service	D	C	B	F	B	B	F	B	B	C	B	B
Approach Delay (s)		20.2			33.3			80.3			22.6	
Approach LOS		C			C			F			C	

Intersection Summary				
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	55.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

15: Steele Canyon Rd. & Willow Glen Dr.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	318	576	143	261	5	276	19	111	2	40	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.87			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3530		1770	1625			1807	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3530		1770	1625			1807	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	346	626	155	284	5	300	21	121	2	43	12
RTOR Reduction (vph)	0	0	153	0	1	0	0	71	0	0	7	0
Lane Group Flow (vph)	7	346	473	155	288	0	300	71	0	0	50	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.7	30.3	79.7	15.6	45.2		49.4	49.4			7.3	
Effective Green, g (s)	0.7	30.3	79.7	15.6	45.2		49.4	49.4			7.3	
Actuated g/C Ratio	0.01	0.26	0.67	0.13	0.38		0.42	0.42			0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	10	475	1117	232	1345		737	676			111	
v/s Ratio Prot	0.00	c0.19	c0.18	c0.09	0.08		0.17	0.04			c0.03	
v/s Ratio Perm			0.12									
v/c Ratio	0.70	0.73	0.42	0.67	0.21		0.41	0.11			0.45	
Uniform Delay, d1	58.8	40.4	8.9	49.0	24.7		24.3	21.1			53.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	117.6	5.5	0.3	7.1	0.1		1.7	0.3			2.9	
Delay (s)	176.5	45.9	9.2	56.1	24.8		26.0	21.4			56.7	
Level of Service	F	D	A	E	C		C	C			E	
Approach Delay (s)		23.4			35.7			24.5			56.7	
Approach LOS		C			D			C			E	

Intersection Summary				
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	118.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	56.9%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

16: Steele Canyon Rd. & Jamul Dr.

Timing Plan: PM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	24	183	205	36	400	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	199	223	39	435	359
RTOR Reduction (vph)	0	172	0	26	0	0
Lane Group Flow (vph)	26	27	223	13	435	359
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	7.0	7.0	16.4	16.4	15.7	36.1
Effective Green, g (s)	7.0	7.0	16.4	16.4	15.7	36.1
Actuated g/C Ratio	0.14	0.14	0.32	0.32	0.31	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	242	216	597	508	543	1316
v/s Ratio Prot	0.01		c0.12		c0.25	0.19
v/s Ratio Perm		c0.02		0.01		
v/c Ratio	0.11	0.13	0.37	0.02	0.80	0.27
Uniform Delay, d1	19.3	19.4	13.4	11.9	16.3	2.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	1.8	0.1	8.3	0.5
Delay (s)	19.5	19.6	15.2	12.0	24.6	3.2
Level of Service	B	B	B	B	C	A
Approach Delay (s)	19.6		14.7			14.9
Approach LOS	B		B			B

Intersection Summary				
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	46.3%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	26	388	200	50	109	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	422	217	54	118	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217				696	217
vC1, stage 1 conf vol					217	
vC2, stage 2 conf vol					478	
vCu, unblocked vol	217				696	217
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				79	96
cM capacity (veh/h)	1352				566	822

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	28	422	217	54	153
Volume Left	28	0	0	0	118
Volume Right	0	0	0	54	35
cSH	1352	1700	1700	1700	609
Volume to Capacity	0.02	0.25	0.13	0.03	0.25
Queue Length 95th (ft)	2	0	0	0	25
Control Delay (s)	7.7	0.0	0.0	0.0	12.9
Lane LOS	A				B
Approach Delay (s)	0.5		0.0		12.9
Approach LOS					B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	296	0	91	146	1	137
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	322	0	99	159	1	149
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			322		678	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			322		678	322
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		100	79
cM capacity (veh/h)			1238		384	719

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	322	99	159	150
Volume Left	0	99	0	1
Volume Right	0	0	0	149
cSH	1700	1238	1700	715
Volume to Capacity	0.19	0.08	0.09	0.21
Queue Length 95th (ft)	0	7	0	20
Control Delay (s)	0.0	8.2	0.0	11.4
Lane LOS		A		B
Approach Delay (s)	0.0	3.1		11.4
Approach LOS				B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	41	13	19	2	4	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	14	21	2	4	59

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	59	23	63
Volume Left (vph)	45	0	4
Volume Right (vph)	0	2	59
Hadj (s)	0.19	-0.02	-0.51
Departure Headway (s)	4.2	4.1	3.6
Degree Utilization, x	0.07	0.03	0.06
Capacity (veh/h)	833	867	975
Control Delay (s)	7.5	7.2	6.8
Approach Delay (s)	7.5	7.2	6.8
Approach LOS	A	A	A

Intersection Summary			
Delay		7.2	
Level of Service		A	
Intersection Capacity Utilization		19.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1341	18	3	818	10	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1458	20	3	889	11	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1477		2363	1467
vC1, stage 1 conf vol					1467	
vC2, stage 2 conf vol					896	
vCu, unblocked vol			1477		2363	1467
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		94	97
cM capacity (veh/h)			456		183	157

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1477	892	15
Volume Left	0	3	11
Volume Right	20	0	4
cSH	1700	456	175
Volume to Capacity	0.87	0.01	0.09
Queue Length 95th (ft)	0	1	7
Control Delay (s)	0.0	0.2	27.5
Lane LOS		A	D
Approach Delay (s)	0.0	0.2	27.5
Approach LOS			D

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		81.7%	ICU Level of Service D
Analysis Period (min)		15	

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	24.7	120.3	1.46	43.7	A
Jamacha Blvd.	I	55	38.0	34.9	72.9	0.52	25.7	D
SR 94	I	55	38.1	1.0	39.1	0.58	53.6	A
Cougar Canyon Rd.	I	55	78.0	17.8	95.8	1.19	44.8	A
Steele Canyon Rd.	I	55	81.2	17.2	98.4	1.24	45.4	A
Indian Springs Dr.	I	55	121.9	12.0	133.9	1.86	50.0	A
Proctor Valley Rd.	I	55	29.0	15.9	44.9	0.33	26.7	D
Melody Rd.	I	55	56.4	6.6	63.0	0.86	49.2	A
Reservation Rd.	I	55	28.5	17.2	45.7	0.33	25.8	D
Total	I		566.7	147.3	714.0	8.38	42.2	A

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	5.9	267.7	4.00	53.8	A
Peacefull Valley Ran	I	55	28.5	3.7	32.2	0.33	36.6	B
Jefferson Rd.	I	55	56.4	8.9	65.3	0.86	47.5	A
Lyons Valley Rd.	I	55	29.0	27.4	56.4	0.33	21.2	D
Steele Canyon Rd.	I	55	121.9	27.2	149.1	1.86	44.9	A
Cougar Canyon Rd.	I	55	81.2	13.9	95.1	1.24	47.0	A
Jamacha Rd.	I	55	78.0	44.3	122.3	1.19	35.1	B
Jamacha Blvd.	I	55	38.1	5.8	43.9	0.58	47.7	A
Via Mercado	I	55	38.0	28.3	66.3	0.52	28.3	C
Total	I		732.9	165.4	898.3	10.92	43.7	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	96	1916	1656	164	169	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3491		1762	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3491		1762	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	2083	1800	178	184	134
RTOR Reduction (vph)	0	0	9	0	3	100
Lane Group Flow (vph)	104	2083	1969	0	194	21
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	5.0	55.0	46.0		12.9	12.9
Effective Green, g (s)	5.0	55.0	46.0		12.9	12.9
Actuated g/C Ratio	0.07	0.72	0.61		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	116	2564	2115		299	255
v/s Ratio Prot	0.06	c0.59	c0.56		c0.11	
v/s Ratio Perm						0.01
v/c Ratio	0.90	0.81	0.93		0.65	0.08
Uniform Delay, d1	35.2	7.0	13.5		29.4	26.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	52.2	2.1	8.1		4.8	0.1
Delay (s)	87.4	9.1	21.6		34.2	26.7
Level of Service	F	A	C		C	C
Approach Delay (s)		12.8	21.6		31.3	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	1913	112	495	1718	40	87	9	558	5	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1782	2787	1681	1748	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1782	2787	1681	1748	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	2079	122	538	1867	43	95	10	607	5	3	4
RTOR Reduction (vph)	0	0	61	0	0	15	0	0	345	0	0	0
Lane Group Flow (vph)	61	2079	61	538	1867	28	0	105	262	4	4	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.7	45.7	45.7	18.2	58.2	58.2		8.8	27.0	2.2	2.2	2.2
Effective Green, g (s)	5.7	45.7	45.7	18.2	58.2	58.2		8.8	27.0	2.2	2.2	2.2
Actuated g/C Ratio	0.06	0.50	0.50	0.20	0.64	0.64		0.10	0.30	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215	2556	795	687	3255	1013		172	950	40	42	38
v/s Ratio Prot	0.02	c0.41		c0.16	0.37			c0.06	0.06	0.00	0.00	
v/s Ratio Perm			0.04			0.02			0.04			c0.00
v/c Ratio	0.28	0.81	0.08	0.78	0.57	0.03		0.61	0.28	0.10	0.10	0.11
Uniform Delay, d1	40.7	19.0	11.7	34.5	9.3	6.0		39.4	24.5	43.4	43.4	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	2.1	0.0	5.8	0.2	0.0		6.3	0.2	1.1	1.0	1.2
Delay (s)	41.4	21.1	11.7	40.3	9.5	6.0		45.7	24.6	44.5	44.4	44.6
Level of Service	D	C	B	D	A	A		D	C	D	D	D
Approach Delay (s)		21.1			16.2			27.7			44.5	
Approach LOS		C			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	73.0%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1423	972	114	1087	15	1136	32	122	19	19	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1547	1057	124	1182	16	1235	35	133	21	21	67
RTOR Reduction (vph)	0	0	308	0	0	11	0	0	76	0	0	63
Lane Group Flow (vph)	87	1547	749	124	1182	5	1235	35	57	21	21	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	30.0	64.1	5.0	29.5	29.5	34.1	34.1	39.1	5.4	5.4	5.4
Effective Green, g (s)	5.5	30.0	64.1	5.0	29.5	29.5	34.1	34.1	39.1	5.4	5.4	5.4
Actuated g/C Ratio	0.06	0.33	0.71	0.06	0.33	0.33	0.38	0.38	0.43	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	107	1685	1973	189	1657	516	1293	701	753	105	111	94
v/s Ratio Prot	c0.05	c0.30	0.14	0.04	0.23		c0.36	0.02	0.00	c0.01	0.01	
v/s Ratio Perm			0.13			0.00			0.03			0.00
v/c Ratio	0.81	0.92	0.38	0.66	0.71	0.01	0.96	0.05	0.08	0.20	0.19	0.04
Uniform Delay, d1	42.0	29.1	5.3	41.9	26.8	20.6	27.5	17.9	15.1	40.5	40.5	40.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.7	9.5	0.1	7.9	1.5	0.0	15.4	0.0	0.0	0.9	0.8	0.2
Delay (s)	77.7	38.6	5.4	49.9	28.3	20.6	42.9	17.9	15.1	41.4	41.3	40.3
Level of Service	E	D	A	D	C	C	D	B	B	D	D	D
Approach Delay (s)		26.8			30.2			39.6			40.7	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	79.9%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	926	929	3	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	1007	1010	3	1	5
RTOR Reduction (vph)	0	0	0	1	0	4
Lane Group Flow (vph)	4	1007	1010	2	1	1
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	0.7	45.6	40.9	40.9	16.4	17.1
Effective Green, g (s)	0.7	45.6	40.9	40.9	16.4	17.1
Actuated g/C Ratio	0.01	0.65	0.58	0.58	0.23	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	34	1213	1088	924	414	477
v/s Ratio Prot	0.00	c0.54	c0.54		0.00	c0.00
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.12	0.83	0.93	0.00	0.00	0.00
Uniform Delay, d1	34.3	9.3	13.2	6.1	20.5	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	5.0	13.2	0.0	0.0	0.0
Delay (s)	35.9	14.2	26.5	6.1	20.5	20.0
Level of Service	D	B	C	A	C	C
Approach Delay (s)		14.3	26.4		20.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	888	0	2	911	145	1	2	7	172	2	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1672			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1672			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	965	0	2	990	158	1	2	8	187	2	73
RTOR Reduction (vph)	0	0	0	0	0	53	0	6	0	0	0	61
Lane Group Flow (vph)	62	965	0	2	990	105	0	5	0	0	189	12
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	4.1	36.5		0.7	33.1	33.1		16.2			13.3	13.3
Effective Green, g (s)	4.1	36.5		0.7	33.1	33.1		16.2			13.3	13.3
Actuated g/C Ratio	0.05	0.44		0.01	0.40	0.40		0.20			0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	87	1561		14	1416	633		327			285	254
v/s Ratio Prot	c0.04	c0.27		0.00	c0.28			c0.00			c0.11	
v/s Ratio Perm						0.07						0.01
v/c Ratio	0.71	0.62		0.14	0.70	0.17		0.01			0.66	0.05
Uniform Delay, d1	38.7	17.7		40.7	20.7	15.9		26.8			32.6	29.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	24.0	0.7		4.7	1.5	0.1		0.1			5.7	0.1
Delay (s)	62.7	18.5		45.4	22.2	16.1		26.9			38.3	29.4
Level of Service	E	B		D	C	B		C			D	C
Approach Delay (s)		21.2			21.4			26.9			35.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	877	7	4	872	13	6	0	4	6	0	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	1860		1770	1859			1717			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.85			0.75	1.00
Satd. Flow (perm)	1770	1860		1770	1859			1499			1398	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	199	953	8	4	948	14	7	0	4	7	0	203
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	0	0	0	184
Lane Group Flow (vph)	199	961	0	4	962	0	0	1	0	0	7	19
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	11.1	58.4		0.7	48.0			7.3			7.3	7.3
Effective Green, g (s)	11.1	58.4		0.7	48.0			7.3			7.3	7.3
Actuated g/C Ratio	0.14	0.74		0.01	0.61			0.09			0.09	0.09
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	250	1385		15	1138			139			130	147
v/s Ratio Prot	c0.11	0.52		0.00	c0.52							
v/s Ratio Perm								0.00			0.01	c0.01
v/c Ratio	0.80	0.69		0.27	0.85			0.01			0.05	0.13
Uniform Delay, d1	32.6	5.3		38.6	12.2			32.3			32.4	32.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	15.9	1.5		9.3	5.9			0.0			0.2	0.4
Delay (s)	48.5	6.8		47.9	18.1			32.3			32.6	33.0
Level of Service	D	A		D	B			C			C	C
Approach Delay (s)		14.0			18.2			32.3			33.0	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	72.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

7: Proctor Valley Rd./Jefferson Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	759	89	2	817	64	57	20	10	63	21	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1776			1763	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.78			0.79	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1431			1441	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	825	97	2	888	70	62	22	11	68	23	20
RTOR Reduction (vph)	0	0	37	0	0	33	0	7	0	0	11	0
Lane Group Flow (vph)	18	825	60	2	888	37	0	88	0	0	100	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.7	32.3	32.3	0.7	32.3	32.3		16.3			16.3	
Effective Green, g (s)	0.7	32.3	32.3	0.7	32.3	32.3		16.3			16.3	
Actuated g/C Ratio	0.01	0.53	0.53	0.01	0.53	0.53		0.27			0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	20	981	834	20	981	834		380			383	
v/s Ratio Prot	c0.01	0.44		0.00	c0.48							
v/s Ratio Perm			0.04			0.02		0.06			c0.07	
v/c Ratio	0.90	0.84	0.07	0.10	0.91	0.04		0.23			0.26	
Uniform Delay, d1	30.3	12.3	7.1	30.0	13.1	7.0		17.6			17.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	153.9	6.6	0.0	2.2	11.6	0.0		1.4			1.7	
Delay (s)	184.2	18.9	7.2	32.2	24.7	7.0		19.0			19.4	
Level of Service	F	B	A	C	C	A		B			B	
Approach Delay (s)		20.9			23.4			19.0			19.4	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	56.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	14	6	767	866	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	15	7	834	941	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1795	948	955			
vC1, stage 1 conf vol	948					
vC2, stage 2 conf vol	847					
vCu, unblocked vol	1795	948	955			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	95	99			
cM capacity (veh/h)	285	316	720			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	25	7	834	955
Volume Left	10	7	0	0
Volume Right	15	0	0	14
cSH	303	720	1700	1700
Volume to Capacity	0.08	0.01	0.49	0.56
Queue Length 95th (ft)	7	1	0	0
Control Delay (s)	17.9	10.0	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	17.9	0.1		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		56.4%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	0	16	0	0	4	16	846	0	2	796	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.86		1.00	1.00		1.00	1.00	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1673			1611		1770	1863		1770	1858	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1704			1611		1770	1863		1770	1858	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	0	17	0	0	4	17	920	0	2	865	15
RTOR Reduction (vph)	0	26	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	0	0	17	920	0	2	879	0
Turn Type	Perm	NA			NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		1.7			1.7		0.6	37.6		0.6	37.6	
Effective Green, g (s)		1.7			1.7		0.6	37.6		0.6	37.6	
Actuated g/C Ratio		0.03			0.03		0.01	0.72		0.01	0.72	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		55			52		20	1349		20	1346	
v/s Ratio Prot					0.00		c0.01	c0.49		0.00	0.47	
v/s Ratio Perm		c0.00										
v/c Ratio		0.02			0.00		0.85	0.68		0.10	0.65	
Uniform Delay, d1		24.3			24.3		25.6	3.9		25.4	3.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.0		129.8	1.4		2.2	1.2	
Delay (s)		24.4			24.3		155.4	5.3		27.6	4.9	
Level of Service		C			C		F	A		C	A	
Approach Delay (s)		24.4			24.3			8.1			4.9	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay		6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio		0.66		
Actuated Cycle Length (s)		51.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization		59.3%	ICU Level of Service	B
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	620	140	117	218	289	531
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	152	127	237	314	577
RTOR Reduction (vph)	0	104	0	0	0	403
Lane Group Flow (vph)	674	48	127	237	314	174
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	13.2	13.2	4.1	20.8	12.7	12.7
Effective Green, g (s)	13.2	13.2	4.1	20.8	12.7	12.7
Actuated g/C Ratio	0.31	0.31	0.10	0.50	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1078	497	172	922	563	478
v/s Ratio Prot			c0.07	0.13	c0.17	
v/s Ratio Perm	c0.20	0.03				0.11
v/c Ratio	0.63	0.10	0.74	0.26	0.56	0.37
Uniform Delay, d1	12.3	10.2	18.4	6.1	12.3	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	15.2	0.1	1.2	0.5
Delay (s)	13.4	10.3	33.6	6.3	13.5	12.0
Level of Service	B	B	C	A	B	B
Approach Delay (s)	12.8			15.8	12.5	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	43	274	17	47	353
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	47	298	18	51	384
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	793	307			316	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	793	307			316	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	94			96	
cM capacity (veh/h)	343	733			1244	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	63	316	51	384
Volume Left	16	0	51	0
Volume Right	47	18	0	0
cSH	566	1700	1244	1700
Volume to Capacity	0.11	0.19	0.04	0.23
Queue Length 95th (ft)	9	0	3	0
Control Delay (s)	12.2	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	12.2	0.0	0.9	
Approach LOS	B			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	133	49	39	140	204	154
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	145	53	42	152	222	167
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	542	305	389			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	542	305	389			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	93	96			
cM capacity (veh/h)	483	734	1169			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	198	42	152	389
Volume Left	145	42	0	0
Volume Right	53	0	0	167
cSH	661	1169	1700	1700
Volume to Capacity	0.30	0.04	0.09	0.23
Queue Length 95th (ft)	31	3	0	0
Control Delay (s)	14.2	8.2	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.2	1.8		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		4.0		
Intersection Capacity Utilization		40.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	2	256	3	5	1	269	427	2	1	408	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1775	1583	1770	1863	1583	3433	3537		1770	1863	1583
Flt Permitted		0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1775	1583	1770	1863	1583	3433	3537		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	2	278	3	5	1	292	464	2	1	443	133
RTOR Reduction (vph)	0	0	206	0	0	1	0	0	0	0	0	75
Lane Group Flow (vph)	0	130	72	3	5	0	292	466	0	1	443	58
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		7.3	14.5	1.0	1.0	1.6	7.2	30.8		0.6	24.2	24.2
Effective Green, g (s)		7.3	14.5	1.0	1.0	1.6	7.2	30.8		0.6	24.2	24.2
Actuated g/C Ratio		0.13	0.26	0.02	0.02	0.03	0.13	0.55		0.01	0.43	0.43
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		232	412	31	33	159	443	1955		19	809	687
v/s Ratio Prot		c0.07	0.02	0.00	c0.00	0.00	c0.09	0.13		0.00	c0.24	
v/s Ratio Perm			0.02			0.00						0.04
v/c Ratio		0.56	0.18	0.10	0.15	0.00	0.66	0.24		0.05	0.55	0.08
Uniform Delay, d1		22.7	16.0	26.9	26.9	26.3	23.1	6.4		27.3	11.7	9.2
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.1	0.2	1.4	2.1	0.0	3.5	0.3		1.2	2.7	0.2
Delay (s)		25.8	16.2	28.3	29.1	26.3	26.6	6.7		28.4	14.3	9.5
Level of Service		C	B	C	C	C	C	A		C	B	A
Approach Delay (s)		19.2			28.5			14.4			13.3	
Approach LOS		B			C			B			B	

Intersection Summary				
HCM 2000 Control Delay		15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio		0.56		
Actuated Cycle Length (s)		55.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization		52.5%	ICU Level of Service	A
Analysis Period (min)		15		
c Critical Lane Group				

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	607	427	175	583	66	496	74	145	121	118	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	660	464	190	634	72	539	80	158	132	128	78
RTOR Reduction (vph)	0	0	289	0	0	53	0	0	102	0	0	56
Lane Group Flow (vph)	127	660	175	190	634	19	539	80	56	132	128	22
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.1	14.4	22.4	4.0	15.3	15.3	8.0	21.0	21.0	3.9	16.9	16.9
Effective Green, g (s)	3.1	14.4	22.4	4.0	15.3	15.3	8.0	21.0	21.0	3.9	16.9	16.9
Actuated g/C Ratio	0.05	0.24	0.38	0.07	0.26	0.26	0.13	0.35	0.35	0.07	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179	1234	704	231	1311	408	463	659	560	225	530	451
v/s Ratio Prot	0.04	c0.13	0.03	c0.06	0.12		c0.16	0.04		0.04	c0.07	
v/s Ratio Perm			0.08			0.01			0.04			0.01
v/c Ratio	0.71	0.53	0.25	0.82	0.48	0.05	1.16	0.12	0.10	0.59	0.24	0.05
Uniform Delay, d1	27.7	19.5	12.7	27.3	18.7	16.5	25.6	12.9	12.8	26.9	16.3	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	0.4	0.2	20.5	0.3	0.0	95.2	0.4	0.4	3.9	1.1	0.2
Delay (s)	39.8	20.0	12.9	47.8	18.9	16.6	120.9	13.3	13.2	30.8	17.4	15.6
Level of Service	D	B	B	D	B	B	F	B	B	C	B	B
Approach Delay (s)		19.4			24.9			87.9			22.2	
Approach LOS		B			C			F			C	

Intersection Summary				
HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

15: Steele Canyon Rd. & Willow Glen Dr.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	334	393	85	322	5	300	5	107	3	7	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.86			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	3532		1770	1595			1725	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1583	1770	3532		1770	1595			1725	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	363	427	92	350	5	326	5	116	3	8	11
RTOR Reduction (vph)	0	0	117	0	1	0	0	63	0	0	11	0
Lane Group Flow (vph)	7	363	310	92	354	0	326	58	0	0	11	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.6	26.7	71.5	8.5	34.6		44.8	44.8			2.5	
Effective Green, g (s)	0.6	26.7	71.5	8.5	34.6		44.8	44.8			2.5	
Actuated g/C Ratio	0.01	0.27	0.73	0.09	0.35		0.45	0.45			0.03	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	10	504	1213	152	1240		805	725			43	
v/s Ratio Prot	0.00	c0.19	0.12	c0.05	0.10		c0.18	0.04			c0.01	
v/s Ratio Perm			0.08									
v/c Ratio	0.70	0.72	0.26	0.61	0.29		0.40	0.08			0.26	
Uniform Delay, d1	48.9	32.5	4.5	43.4	23.0		17.9	15.2			47.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	117.6	5.0	0.1	6.7	0.1		1.5	0.2			3.2	
Delay (s)	166.5	37.5	4.7	50.0	23.2		19.5	15.4			50.3	
Level of Service	F	D	A	D	C		B	B			D	
Approach Delay (s)		21.1			28.7			18.4			50.3	
Approach LOS		C			C			B			D	

Intersection Summary				
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	55.6%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	17	175	203	22	190	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	190	221	24	207	311
RTOR Reduction (vph)	0	165	0	14	0	0
Lane Group Flow (vph)	18	25	221	10	207	311
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	5.4	5.4	17.2	17.2	6.0	27.2
Effective Green, g (s)	5.4	5.4	17.2	17.2	6.0	27.2
Actuated g/C Ratio	0.13	0.13	0.42	0.42	0.15	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	235	210	789	670	261	1248
v/s Ratio Prot	0.01		0.12		c0.12	c0.17
v/s Ratio Perm		c0.02		0.01		
v/c Ratio	0.08	0.12	0.28	0.02	0.79	0.25
Uniform Delay, d1	15.4	15.5	7.7	6.8	16.7	2.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.9	0.0	15.1	0.5
Delay (s)	15.6	15.8	8.5	6.8	31.8	3.1
Level of Service	B	B	A	A	C	A
Approach Delay (s)	15.7		8.4			14.6
Approach LOS	B		A			B

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	40.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	32	213	198	39	58	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	232	215	42	63	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	215				516	215
vC1, stage 1 conf vol					215	
vC2, stage 2 conf vol					301	
vCu, unblocked vol	215				516	215
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				90	93
cM capacity (veh/h)	1355				663	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	35	232	215	42	117
Volume Left	35	0	0	0	63
Volume Right	0	0	0	42	54
cSH	1355	1700	1700	1700	729
Volume to Capacity	0.03	0.14	0.13	0.02	0.16
Queue Length 95th (ft)	2	0	0	0	14
Control Delay (s)	7.7	0.0	0.0	0.0	10.9
Lane LOS	A				B
Approach Delay (s)	1.0		0.0		10.9
Approach LOS					B

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	166	0	87	175	3	100
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	180	0	95	190	3	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			180		560	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			180		560	180
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		99	87
cM capacity (veh/h)			1395		456	862

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	180	95	190	112
Volume Left	0	95	0	3
Volume Right	0	0	0	109
cSH	1700	1395	1700	841
Volume to Capacity	0.11	0.07	0.11	0.13
Queue Length 95th (ft)	0	5	0	11
Control Delay (s)	0.0	7.8	0.0	9.9
Lane LOS		A		A
Approach Delay (s)	0.0	2.6		9.9
Approach LOS				A

Intersection Summary			
Average Delay		3.2	
Intersection Capacity Utilization		29.9%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	48	22	24	5	3	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	24	26	5	3	71

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	76	32	74
Volume Left (vph)	52	0	3
Volume Right (vph)	0	5	71
Hadj (s)	0.17	-0.07	-0.53
Departure Headway (s)	4.2	4.1	3.6
Degree Utilization, x	0.09	0.04	0.07
Capacity (veh/h)	828	865	961
Control Delay (s)	7.7	7.2	6.9
Approach Delay (s)	7.7	7.2	6.9
Approach LOS	A	A	A

Intersection Summary			
Delay		7.3	
Level of Service		A	
Intersection Capacity Utilization		21.3%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1119	13	1	1010	2	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1216	14	1	1098	2	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1230		2323	1223
vC1, stage 1 conf vol					1223	
vC2, stage 2 conf vol					1100	
vCu, unblocked vol			1230		2323	1223
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	98
cM capacity (veh/h)			566		206	219

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1230	1099	7
Volume Left	0	1	2
Volume Right	14	0	4
cSH	1700	566	214
Volume to Capacity	0.72	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	22.3
Lane LOS		A	C
Approach Delay (s)	0.0	0.1	22.3
Approach LOS			C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	2	66	2	4	47	108	461	24	55	162	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85			0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1591			1635		3433	1849		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1591			1635		3433	1849		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	2	72	2	4	51	117	501	26	60	176	340
RTOR Reduction (vph)	0	63	0	0	48	0	0	2	0	0	0	186
Lane Group Flow (vph)	168	11	0	0	9	0	117	525	0	60	176	154
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.7	6.7			3.3		3.2	25.4		1.9	24.1	24.1
Effective Green, g (s)	6.7	6.7			3.3		3.2	25.4		1.9	24.1	24.1
Actuated g/C Ratio	0.13	0.13			0.06		0.06	0.48		0.04	0.45	0.45
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	431	199			101		206	881		63	842	715
v/s Ratio Prot	c0.05	0.01			c0.01		c0.03	c0.28		0.03	0.09	
v/s Ratio Perm												0.10
v/c Ratio	0.39	0.06			0.09		0.57	0.60		0.95	0.21	0.22
Uniform Delay, d1	21.4	20.5			23.6		24.4	10.2		25.7	8.8	8.9
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1			0.4		3.6	1.1		96.0	0.1	0.2
Delay (s)	22.0	20.6			24.0		27.9	11.3		121.6	9.0	9.0
Level of Service	C	C			C		C	B		F	A	A
Approach Delay (s)		21.6			24.0			14.3			20.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	593	230	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	645	250	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	895	250	250			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	895	250	250			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	311	789	1316			

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	0	645	250	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1316	1700	1700
Volume to Capacity	0.00	0.00	0.15	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0	0.0	
Approach LOS	A			

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		34.5%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	528	8	174	10	7	22	169	222	0	13	539	485
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.92		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1596			1701		3433	1863		1770	1863	1583
Flt Permitted	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1596			1701		3433	1863		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	574	9	189	11	8	24	184	241	0	14	586	527
RTOR Reduction (vph)	0	145	0	0	23	0	0	0	0	0	0	296
Lane Group Flow (vph)	574	53	0	0	20	0	184	241	0	14	586	231
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.9	16.9			3.8		4.2	35.5		0.6	31.9	31.9
Effective Green, g (s)	16.9	16.9			3.8		4.2	35.5		0.6	31.9	31.9
Actuated g/C Ratio	0.23	0.23			0.05		0.06	0.49		0.01	0.44	0.44
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	796	370			88		198	908		14	816	693
v/s Ratio Prot	c0.17	0.03			c0.01		c0.05	c0.13		0.01	c0.31	
v/s Ratio Perm												0.15
v/c Ratio	0.72	0.14			0.23		0.93	0.27		1.00	0.72	0.33
Uniform Delay, d1	25.8	22.2			33.1		34.2	11.0		36.1	16.8	13.5
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.2	0.2			1.3		43.8	0.2		240.5	3.0	0.3
Delay (s)	29.0	22.4			34.4		78.0	11.1		276.6	19.8	13.7
Level of Service	C	C			C		E	B		F	B	B
Approach Delay (s)		27.3			34.4			40.1			20.2	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay		26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio		0.67		
Actuated Cycle Length (s)		72.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization		64.9%	ICU Level of Service	C
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	291	723	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	316	786	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1102	786	786			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1102	786	786			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	234	392	833			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	316	786
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	833	1700
Volume to Capacity	0.00	0.00	0.46
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	348	18	117	2	5	50	130	216	3	59	466	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.87			0.88		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1621			1637		3433	1859		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1621			1637		3433	1859		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	20	127	2	5	54	141	235	3	64	507	423
RTOR Reduction (vph)	0	101	0	0	51	0	0	1	0	0	0	252
Lane Group Flow (vph)	378	46	0	0	10	0	141	237	0	64	507	171
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	12.7	12.7			3.6		4.4	26.3		3.1	25.0	25.0
Effective Green, g (s)	12.7	12.7			3.6		4.4	26.3		3.1	25.0	25.0
Actuated g/C Ratio	0.21	0.21			0.06		0.07	0.43		0.05	0.41	0.41
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	706	333			95		244	792		88	754	641
v/s Ratio Prot	c0.11	0.03			c0.01		c0.04	0.13		0.04	c0.27	
v/s Ratio Perm												0.11
v/c Ratio	0.54	0.14			0.11		0.58	0.30		0.73	0.67	0.27
Uniform Delay, d1	21.9	20.0			27.5		27.8	11.6		28.9	15.0	12.2
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2			0.5		3.3	0.2		25.6	2.4	0.2
Delay (s)	22.7	20.2			28.0		31.0	11.9		54.5	17.4	12.5
Level of Service	C	C			C		C	B		D	B	B
Approach Delay (s)		22.0			28.0			19.0			17.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	349	585	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	379	636	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1015	636	636			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1015	636	636			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	264	478	948			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	379	636
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	948	1700
Volume to Capacity	0.00	0.00	0.37
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	519	8	178	0	7	24	158	253	0	13	294	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1596			1670		3433	1863		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1596			1670		3433	1863		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	564	9	193	0	8	26	172	275	0	14	320	533
RTOR Reduction (vph)	0	142	0	0	25	0	0	0	0	0	0	350
Lane Group Flow (vph)	564	60	0	0	9	0	172	275	0	14	320	183
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.0	15.0			2.2		4.2	23.2		0.6	19.6	19.6
Effective Green, g (s)	15.0	15.0			2.2		4.2	23.2		0.6	19.6	19.6
Actuated g/C Ratio	0.26	0.26			0.04		0.07	0.41		0.01	0.34	0.34
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	903	420			64		252	758		18	640	544
v/s Ratio Prot	c0.16	0.04			c0.01		c0.05	c0.15		0.01	c0.17	
v/s Ratio Perm												0.12
v/c Ratio	0.62	0.14			0.14		0.68	0.36		0.78	0.50	0.34
Uniform Delay, d1	18.5	16.1			26.5		25.7	11.8		28.1	14.8	13.9
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2			1.0		7.4	0.3		107.6	0.6	0.4
Delay (s)	19.9	16.2			27.5		33.2	12.1		135.7	15.4	14.2
Level of Service	B	B			C		C	B		F	B	B
Approach Delay (s)		18.9			27.5			20.2			16.6	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	411	472	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	447	513	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	960	513	513			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	513	513			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	285	561	1052			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	447	513
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1052	1700
Volume to Capacity	0.00	0.00	0.30
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	59	1385	2253	235	189	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.97	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3489		1732	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3489		1732	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	1505	2449	255	205	303
RTOR Reduction (vph)	0	0	6	0	8	53
Lane Group Flow (vph)	64	1505	2699	0	258	189
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	5.0	114.0	105.0		18.0	18.0
Effective Green, g (s)	5.0	114.0	105.0		18.0	18.0
Actuated g/C Ratio	0.04	0.81	0.75		0.13	0.13
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	63	2881	2616		222	193
v/s Ratio Prot	c0.04	0.43	c0.77		c0.15	
v/s Ratio Perm						0.13
v/c Ratio	1.02	0.52	1.03		1.16	0.98
Uniform Delay, d1	67.5	4.2	17.5		61.0	60.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	117.9	0.2	26.3		111.4	57.9
Delay (s)	185.4	4.4	43.8		172.4	118.7
Level of Service	F	A	D		F	F
Approach Delay (s)		11.8	43.8		146.8	
Approach LOS		B	D		F	

Intersection Summary			
HCM 2000 Control Delay	44.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1427	92	473	2107	14	271	7	550	4	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1551	100	514	2290	15	295	8	598	4	4	0
RTOR Reduction (vph)	0	0	56	0	0	5	0	0	207	0	0	0
Lane Group Flow (vph)	8	1551	44	514	2290	10	150	153	391	4	4	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.0	37.6	37.6	19.0	55.6	55.6	12.3	12.3	31.3	1.0	1.0	
Effective Green, g (s)	1.0	37.6	37.6	19.0	55.6	55.6	12.3	12.3	31.3	1.0	1.0	
Actuated g/C Ratio	0.01	0.44	0.44	0.22	0.65	0.65	0.14	0.14	0.36	0.01	0.01	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	39	2225	692	759	3291	1024	240	241	650	19	20	
v/s Ratio Prot	0.00	0.30		c0.15	c0.45		0.09	0.09	c0.13	c0.00	0.00	
v/s Ratio Perm			0.03			0.01			0.11			
v/c Ratio	0.21	0.70	0.06	0.68	0.70	0.01	0.62	0.63	0.60	0.21	0.20	
Uniform Delay, d1	42.1	19.5	14.0	30.6	9.7	5.4	34.6	34.7	22.2	42.1	42.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	1.0	0.0	2.4	0.7	0.0	5.0	5.4	1.6	5.5	4.9	
Delay (s)	44.7	20.5	14.0	33.0	10.4	5.4	39.6	40.1	23.8	47.5	46.9	
Level of Service	D	C	B	C	B	A	D	D	C	D	D	
Approach Delay (s)		20.2			14.5			29.2			47.2	
Approach LOS		C			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	75.0%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	1033	954	207	1354	18	1298	42	298	10	12	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	1123	1037	225	1472	20	1411	46	324	11	13	40
RTOR Reduction (vph)	0	0	201	0	0	14	0	0	155	0	0	38
Lane Group Flow (vph)	78	1123	836	225	1472	6	1411	46	169	11	13	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.0	31.3	78.4	9.8	35.1	35.1	47.1	47.1	56.9	5.2	5.2	5.2
Effective Green, g (s)	6.0	31.3	78.4	9.8	35.1	35.1	47.1	47.1	56.9	5.2	5.2	5.2
Actuated g/C Ratio	0.05	0.29	0.72	0.09	0.32	0.32	0.43	0.43	0.52	0.05	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	97	1454	1134	307	1631	507	1478	802	881	84	88	75
v/s Ratio Prot	0.04	0.22	0.32	c0.07	c0.29		c0.41	0.02	0.02	0.01	c0.01	
v/s Ratio Perm			0.21			0.00			0.09			0.00
v/c Ratio	0.80	0.77	0.74	0.73	0.90	0.01	0.95	0.06	0.19	0.13	0.15	0.03
Uniform Delay, d1	51.1	35.8	9.3	48.5	35.5	25.3	30.1	18.2	14.0	49.9	50.0	49.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.6	2.6	2.5	8.7	7.4	0.0	14.0	0.0	0.1	0.7	0.8	0.1
Delay (s)	87.7	38.4	11.9	57.3	42.9	25.3	44.1	18.2	14.1	50.6	50.8	49.8
Level of Service	F	D	B	E	D	C	D	B	B	D	D	D
Approach Delay (s)		27.8			44.5			38.0			50.2	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	109.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	83.8%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	324	790	1111	288	118	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	352	859	1208	313	128	405
RTOR Reduction (vph)	0	0	0	111	0	63
Lane Group Flow (vph)	352	859	1208	202	128	342
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	10.0	76.1	62.1	62.1	12.0	22.0
Effective Green, g (s)	10.0	76.1	62.1	62.1	12.0	22.0
Actuated g/C Ratio	0.10	0.79	0.65	0.65	0.12	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	357	1475	1203	1022	221	428
v/s Ratio Prot	0.10	0.46	c0.65		0.07	c0.08
v/s Ratio Perm				0.13		0.13
v/c Ratio	0.99	0.58	1.00	0.20	0.58	0.80
Uniform Delay, d1	43.0	3.9	17.0	6.9	39.7	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.5	0.6	27.0	0.1	3.7	10.0
Delay (s)	86.5	4.5	44.0	7.0	43.3	45.0
Level of Service	F	A	D	A	D	D
Approach Delay (s)		28.3	36.3		44.6	
Approach LOS		C	D		D	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	801	0	4	1140	202	4	2	2	156	0	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1756			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1756			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	871	0	4	1239	220	4	2	2	170	0	284
RTOR Reduction (vph)	0	0	0	0	0	32	0	2	0	0	0	240
Lane Group Flow (vph)	132	871	0	4	1239	188	0	6	0	0	170	44
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	11.0	104.4		0.8	94.2	94.2		6.1			15.8	15.8
Effective Green, g (s)	11.0	104.4		0.8	94.2	94.2		6.1			15.8	15.8
Actuated g/C Ratio	0.08	0.73		0.01	0.66	0.66		0.04			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	136	1359		9	1226	1042		74			195	174
v/s Ratio Prot	c0.07	0.47		0.00	c0.67			c0.00			c0.10	
v/s Ratio Perm						0.12						0.03
v/c Ratio	0.97	0.64		0.44	1.01	0.18		0.08			0.87	0.25
Uniform Delay, d1	65.9	9.8		70.9	24.4	9.5		65.8			62.7	58.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	67.9	1.0		31.3	28.3	0.1		0.5			32.0	0.8
Delay (s)	133.7	10.9		102.2	52.8	9.6		66.3			94.6	59.0
Level of Service	F	B		F	D	A		E			F	E
Approach Delay (s)		27.0			46.4			66.3			72.3	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	143.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	178	765	8	9	981	7	12	2	5	12	3	384
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	193	832	9	10	1066	8	13	2	5	13	3	417
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1074			840			2728	2316	836	2315	2317	1070
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1074			840			2728	2316	836	2315	2317	1070
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	70			99			0	92	99	30	88	0
cM capacity (veh/h)	649			795			0	26	367	19	26	269

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	193	840	10	1074	21	16	417
Volume Left	193	0	10	0	13	13	0
Volume Right	0	9	0	8	5	0	417
cSH	649	1700	795	1700	0	20	269
Volume to Capacity	0.30	0.49	0.01	0.63	Err	0.82	1.55
Queue Length 95th (ft)	31	0	1	0	Err	56	622
Control Delay (s)	12.9	0.0	9.6	0.0	Err	407.4	300.8
Lane LOS	B		A		F	F	F
Approach Delay (s)	2.4		0.1		Err	304.8	
Approach LOS					F	F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

7: Proctor Valley Rd./Jefferson Rd. & SR 94

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	592	94	12	668	72	270	101	22	83	94	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1787			1718	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.51			0.84	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		952			1456	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	643	102	13	726	78	293	110	24	90	102	188
RTOR Reduction (vph)	0	0	27	0	0	38	0	2	0	0	33	0
Lane Group Flow (vph)	126	643	75	13	726	40	0	425	0	0	347	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	8.0	51.8	51.8	1.6	45.4	45.4		47.0			47.0	
Effective Green, g (s)	8.0	51.8	51.8	1.6	45.4	45.4		47.0			47.0	
Actuated g/C Ratio	0.07	0.46	0.46	0.01	0.40	0.40		0.42			0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	125	858	729	25	752	639		398			608	
v/s Ratio Prot	c0.07	0.35		0.01	c0.39							
v/s Ratio Perm			0.05			0.03		c0.45			0.24	
v/c Ratio	1.01	0.75	0.10	0.52	0.97	0.06		1.07			0.57	
Uniform Delay, d1	52.2	25.0	17.1	55.0	32.7	20.5		32.7			25.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	82.6	3.6	0.1	18.1	24.4	0.0		64.5			1.3	
Delay (s)	134.8	28.6	17.2	73.2	57.1	20.5		97.2			26.3	
Level of Service	F	C	B	E	E	C		F			C	
Approach Delay (s)		42.6			53.9			97.2			26.3	
Approach LOS		D			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	5	7	745	613	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	5	8	810	666	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1498	673	679			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1498	673	679			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	99			
cM capacity (veh/h)	134	455	913			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	13	8	810	679
Volume Left	8	8	0	0
Volume Right	5	0	0	13
cSH	189	913	1700	1700
Volume to Capacity	0.07	0.01	0.48	0.40
Queue Length 95th (ft)	5	1	0	0
Control Delay (s)	25.4	9.0	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	25.4	0.1		0.0
Approach LOS	D			

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		49.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	0	23	3	0	46	16	587	8	53	492	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	0	25	3	0	50	17	638	9	58	535	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1395	1349	553	1370	1363	642	571			647		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1395	1349	553	1370	1363	642	571			647		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	65	100	95	97	100	89	98			94		
cM capacity (veh/h)	100	139	533	111	136	474	1002			939		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	53	664	628
Volume Left	35	3	17	58
Volume Right	25	50	9	36
cSH	151	395	1002	939
Volume to Capacity	0.40	0.13	0.02	0.06
Queue Length 95th (ft)	43	12	1	5
Control Delay (s)	43.5	15.5	0.5	1.6
Lane LOS	E	C	A	A
Approach Delay (s)	43.5	15.5	0.5	1.6
Approach LOS	E	C		

Intersection Summary				
Average Delay		3.4		
Intersection Capacity Utilization		70.3%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	147	32	76	428	240	344
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	160	35	83	465	261	374
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1078	448	635			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1078	448	635			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	28	94	91			
cM capacity (veh/h)	221	611	948			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	195	548	635
Volume Left	160	83	0
Volume Right	35	0	374
cSH	249	948	1700
Volume to Capacity	0.78	0.09	0.37
Queue Length 95th (ft)	144	7	0
Control Delay (s)	56.7	2.3	0.0
Lane LOS	F	A	
Approach Delay (s)	56.7	2.3	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	72	479	24	19	171
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	78	521	26	21	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	761	534			547	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	761	534			547	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	82	86			98	
cM capacity (veh/h)	366	546			1023	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	143	547	21	186
Volume Left	65	0	21	0
Volume Right	78	26	0	0
cSH	446	1700	1023	1700
Volume to Capacity	0.32	0.32	0.02	0.11
Queue Length 95th (ft)	34	0	2	0
Control Delay (s)	16.8	0.0	8.6	0.0
Lane LOS	C		A	
Approach Delay (s)	16.8	0.0	0.9	
Approach LOS	C			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	98	75	103	397	202	119
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	82	112	432	220	129
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	940	284	349			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	940	284	349			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	89	91			
cM capacity (veh/h)	266	755	1210			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	188	112	432	349
Volume Left	107	112	0	0
Volume Right	82	0	0	129
cSH	469	1210	1700	1700
Volume to Capacity	0.40	0.09	0.25	0.21
Queue Length 95th (ft)	48	8	0	0
Control Delay (s)	20.0	8.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.0	1.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		4.3		
Intersection Capacity Utilization		39.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	207	2303	1821	339	382	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3456		1765	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3456		1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	225	2503	1979	368	415	211
RTOR Reduction (vph)	0	0	13	0	2	134
Lane Group Flow (vph)	225	2503	2334	0	434	56
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.0	91.0	75.0		21.0	21.0
Effective Green, g (s)	12.0	91.0	75.0		21.0	21.0
Actuated g/C Ratio	0.10	0.76	0.62		0.18	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	2683	2160		308	263
v/s Ratio Prot	c0.13	0.71	c0.68		c0.25	
v/s Ratio Perm						0.04
v/c Ratio	1.27	0.93	1.08		1.41	0.21
Uniform Delay, d1	54.0	12.0	22.5		49.5	42.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	158.7	6.8	45.3		202.9	0.4
Delay (s)	212.7	18.7	67.8		252.4	42.8
Level of Service	F	B	E		F	D
Approach Delay (s)		34.7	67.8		188.8	
Approach LOS		C	E		F	

Intersection Summary				
HCM 2000 Control Delay		65.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio		1.17		
Actuated Cycle Length (s)		120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization		107.7%	ICU Level of Service	G
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2448	201	603	1948	7	181	3	766	9	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1720	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1720	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	2661	218	655	2117	8	197	3	833	10	3	2
RTOR Reduction (vph)	0	0	110	0	0	2	0	0	122	0	0	0
Lane Group Flow (vph)	8	2661	108	655	2117	6	100	100	711	6	7	2
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.2	67.6	67.6	38.1	104.5	104.5	12.6	12.6	50.7	2.6	2.6	2.6
Effective Green, g (s)	1.2	67.6	67.6	38.1	104.5	104.5	12.6	12.6	50.7	2.6	2.6	2.6
Actuated g/C Ratio	0.01	0.49	0.49	0.28	0.76	0.76	0.09	0.09	0.37	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	30	2510	781	955	3881	1208	154	155	632	31	32	30
v/s Ratio Prot	0.00	c0.52		0.19	0.42		0.06	0.06	c0.31	0.00	c0.00	
v/s Ratio Perm			0.07			0.00			0.14			0.00
v/c Ratio	0.27	1.06	0.14	0.69	0.55	0.01	0.65	0.65	1.12	0.19	0.22	0.07
Uniform Delay, d1	67.4	34.7	18.8	44.1	6.6	3.8	60.0	60.0	43.1	66.1	66.1	66.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	36.5	0.1	2.1	0.2	0.0	9.1	8.9	75.3	3.0	3.4	0.9
Delay (s)	72.1	71.1	18.9	46.1	6.7	3.9	69.1	68.9	118.4	69.2	69.6	66.9
Level of Service	E	E	B	D	A	A	E	E	F	E	E	E
Approach Delay (s)		67.2			16.0			108.8			69.1	
Approach LOS		E			B			F			E	

Intersection Summary				
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.11			
Actuated Cycle Length (s)	136.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	108.1%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	1978	1251	268	1382	50	1155	34	272	52	40	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	2150	1360	291	1502	54	1255	37	296	57	43	87
RTOR Reduction (vph)	0	0	99	0	0	33	0	0	72	0	0	81
Lane Group Flow (vph)	125	2150	1261	291	1502	21	1255	37	224	57	43	6
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.2	58.1	107.1	11.0	55.9	55.9	49.0	49.0	60.0	10.0	10.0	10.0
Effective Green, g (s)	13.2	58.1	107.1	11.0	55.9	55.9	49.0	49.0	60.0	10.0	10.0	10.0
Actuated g/C Ratio	0.09	0.40	0.74	0.08	0.39	0.39	0.34	0.34	0.42	0.07	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	2050	1176	262	1972	614	1167	633	703	122	129	109
v/s Ratio Prot	0.07	0.42	c0.36	c0.08	0.30		c0.37	0.02	0.02	c0.03	0.02	
v/s Ratio Perm			0.43			0.01			0.12			0.00
v/c Ratio	0.77	1.05	1.07	1.11	0.76	0.03	1.08	0.06	0.32	0.47	0.33	0.06
Uniform Delay, d1	64.0	43.0	18.5	66.5	38.3	27.4	47.5	32.0	28.3	64.5	63.9	62.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.0	34.1	47.8	88.6	1.8	0.0	49.1	0.0	0.3	2.8	1.5	0.2
Delay (s)	84.0	77.1	66.3	155.1	40.1	27.4	96.7	32.1	28.6	67.3	65.4	62.9
Level of Service	F	E	E	F	D	C	F	C	C	E	E	E
Approach Delay (s)		73.3			57.9			82.5			64.8	
Approach LOS		E			E			F			E	

Intersection Summary				
HCM 2000 Control Delay	71.2	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.03			
Actuated Cycle Length (s)	144.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	98.4%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	92	1346	955	47	68	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1463	1038	51	74	130
RTOR Reduction (vph)	0	0	0	14	0	110
Lane Group Flow (vph)	100	1463	1038	37	74	20
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	5.0	76.1	67.1	67.1	9.2	14.2
Effective Green, g (s)	5.0	76.1	67.1	67.1	9.2	14.2
Actuated g/C Ratio	0.05	0.82	0.72	0.72	0.10	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1519	1339	1138	174	308
v/s Ratio Prot	0.03	c0.79	0.56		c0.04	0.00
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.55	0.96	0.78	0.03	0.43	0.06
Uniform Delay, d1	43.0	7.4	8.3	3.8	39.6	33.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	15.1	2.9	0.0	1.7	0.1
Delay (s)	46.4	22.5	11.2	3.8	41.2	33.9
Level of Service	D	C	B	A	D	C
Approach Delay (s)		24.1	10.8		36.6	
Approach LOS		C	B		D	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1256	2	6	862	170	2	4	21	297	6	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1862		1770	1863	1583		1658			1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1862		1770	1863	1583		1658			1776	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1365	2	7	937	185	2	4	23	323	7	117
RTOR Reduction (vph)	0	0	0	0	0	39	0	22	0	0	0	79
Lane Group Flow (vph)	122	1367	0	7	937	146	0	7	0	0	330	38
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	11.0	91.7		0.8	81.5	81.5		6.6			24.0	24.0
Effective Green, g (s)	11.0	91.7		0.8	81.5	81.5		6.6			24.0	24.0
Actuated g/C Ratio	0.08	0.66		0.01	0.59	0.59		0.05			0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	139	1227		10	1091	927		78			306	273
v/s Ratio Prot	c0.07	c0.73		0.00	0.50			c0.00			c0.19	
v/s Ratio Perm						0.09						0.02
v/c Ratio	0.88	1.11		0.70	0.86	0.16		0.09			1.08	0.14
Uniform Delay, d1	63.4	23.7		69.0	24.0	13.1		63.4			57.5	48.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	41.8	63.0		117.6	6.9	0.1		0.5			73.9	0.2
Delay (s)	105.2	86.7		186.6	30.9	13.2		63.9			131.5	49.0
Level of Service	F	F		F	C	B		E			F	D
Approach Delay (s)		88.2			29.0			63.9			109.9	
Approach LOS		F			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	69.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	139.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	336	1211	15	6	870	18	7	2	5	15	2	192
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	365	1316	16	7	946	20	8	2	5	16	2	209
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	965			1333			3223	3033	1324	3022	3032	955
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	965			1333			3223	3033	1324	3022	3032	955
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	49			99			0	65	97	0	65	33
cM capacity (veh/h)	713			518			1	6	191	3	6	313

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	365	1333	7	965	15	18	209
Volume Left	365	0	7	0	8	16	0
Volume Right	0	16	0	20	5	0	209
cSH	713	1700	518	1700	2	4	313
Volume to Capacity	0.51	0.78	0.01	0.57	9.30	5.01	0.67
Queue Length 95th (ft)	74	0	1	0	Err	Err	112
Control Delay (s)	15.2	0.0	12.0	0.0	Err	Err	36.7
Lane LOS	C		B		F	F	E
Approach Delay (s)	3.3		0.1		Err	847.1	
Approach LOS					F	F	

Intersection Summary				
Average Delay	120.3			
Intersection Capacity Utilization	85.0%	ICU Level of Service	E	
Analysis Period (min)	15			

7: Proctor Valley Rd./Jefferson Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	956	314	33	760	72	149	112	120	93	107	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1750			1800	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.73			0.66	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1309			1218	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	1039	341	36	826	78	162	122	130	101	116	24
RTOR Reduction (vph)	0	0	35	0	0	34	0	16	0	0	4	0
Lane Group Flow (vph)	30	1039	306	36	826	44	0	398	0	0	237	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	2.3	55.1	55.1	2.3	55.1	55.1		29.0			29.0	
Effective Green, g (s)	2.3	55.1	55.1	2.3	55.1	55.1		29.0			29.0	
Actuated g/C Ratio	0.02	0.56	0.56	0.02	0.56	0.56		0.29			0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	41	1043	886	41	1043	886		385			358	
v/s Ratio Prot	0.02	c0.56		c0.02	0.44							
v/s Ratio Perm			0.19			0.03		c0.30			0.19	
v/c Ratio	0.73	1.00	0.35	0.88	0.79	0.05		1.03			0.66	
Uniform Delay, d1	47.7	21.5	11.8	47.9	17.1	9.8		34.7			30.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	49.4	26.7	0.2	92.9	4.2	0.0		54.7			4.5	
Delay (s)	97.2	48.3	12.0	140.9	21.3	9.8		89.4			34.9	
Level of Service	F	D	B	F	C	A		F			C	
Approach Delay (s)		40.6			24.9			89.4			34.9	
Approach LOS		D			C			F			C	

Intersection Summary				
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	83.9%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	28	5	839	1087	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	30	5	912	1182	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2121	1198	1215			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2121	1198	1215			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	50	87	99			
cM capacity (veh/h)	55	226	574			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	58	5	912	1215
Volume Left	27	5	0	0
Volume Right	30	0	0	34
cSH	91	574	1700	1700
Volume to Capacity	0.63	0.01	0.54	0.71
Queue Length 95th (ft)	75	1	0	0
Control Delay (s)	96.0	11.3	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	96.0	0.1		0.0
Approach LOS	F			

Intersection Summary				
Average Delay		2.6		
Intersection Capacity Utilization		69.1%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	0	19	4	0	9	25	819	0	5	1036	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	21	4	0	10	27	890	0	5	1126	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2100	2090	1135	2111	2099	890	1143			890		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2100	2090	1135	2111	2099	890	1143			890		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	100	92	87	100	97	96			99		
cM capacity (veh/h)	35	50	246	33	49	342	611			761		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	37	14	917	1149
Volume Left	16	4	27	5
Volume Right	21	10	0	17
cSH	68	88	611	761
Volume to Capacity	0.55	0.16	0.04	0.01
Queue Length 95th (ft)	57	14	3	1
Control Delay (s)	109.1	53.9	1.3	0.3
Lane LOS	F	F	A	A
Approach Delay (s)	109.1	53.9	1.3	0.3
Approach LOS	F	F		

Intersection Summary				
Average Delay		3.0		
Intersection Capacity Utilization		70.8%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	620	136	116	189	545	529
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	674	148	126	205	592	575
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1338	880	1167			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1338	880	1167			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	57	79			
cM capacity (veh/h)	133	346	598			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	822	332	1167
Volume Left	674	126	0
Volume Right	148	0	575
cSH	150	598	1700
Volume to Capacity	5.48	0.21	0.69
Queue Length 95th (ft)	Err	20	0
Control Delay (s)	Err	6.7	0.0
Lane LOS	F	A	
Approach Delay (s)	Err	6.7	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3541.6		
Intersection Capacity Utilization	130.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	40	34	346	64	72	580
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	37	376	70	78	630
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1198	411			446	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1198	411			446	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	94			93	
cM capacity (veh/h)	191	641			1115	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	80	446	78	630
Volume Left	43	0	78	0
Volume Right	37	70	0	0
cSH	282	1700	1115	1700
Volume to Capacity	0.29	0.26	0.07	0.37
Queue Length 95th (ft)	29	0	6	0
Control Delay (s)	22.8	0.0	8.5	0.0
Lane LOS	C		A	
Approach Delay (s)	22.8	0.0	0.9	
Approach LOS	C			

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	153	147	67	148	519	187
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	160	73	161	564	203
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	972	666	767			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	972	666	767			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	65	91			
cM capacity (veh/h)	256	460	846			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	326	73	161	767
Volume Left	166	73	0	0
Volume Right	160	0	0	203
cSH	443	846	1700	1700
Volume to Capacity	0.74	0.09	0.09	0.45
Queue Length 95th (ft)	148	7	0	0
Control Delay (s)	32.5	9.7	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	32.5	3.0		0.0
Approach LOS	D			

Intersection Summary				
Average Delay		8.5		
Intersection Capacity Utilization		60.9%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	244	2753	1840	270	350	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3471		1768	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3471		1768	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	2992	2000	293	380	140
RTOR Reduction (vph)	0	0	9	0	1	101
Lane Group Flow (vph)	265	2992	2284	0	393	25
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	19.0	98.0	75.0		24.0	24.0
Effective Green, g (s)	19.0	98.0	75.0		24.0	24.0
Actuated g/C Ratio	0.15	0.75	0.58		0.18	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	258	2667	2002		326	277
v/s Ratio Prot	0.15	c0.85	0.66		c0.22	
v/s Ratio Perm						0.02
v/c Ratio	1.03	1.12	1.14		1.21	0.09
Uniform Delay, d1	55.5	16.0	27.5		53.0	43.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	63.2	60.5	70.0		118.1	0.1
Delay (s)	118.7	76.5	97.5		171.1	44.1
Level of Service	F	E	F		F	D
Approach Delay (s)		79.9	97.5		140.3	
Approach LOS		E	F		F	

Intersection Summary				
HCM 2000 Control Delay		91.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio		1.18		
Actuated Cycle Length (s)		130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization		105.0%	ICU Level of Service	G
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2828	192	522	1850	9	168	6	680	7	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1691	1583	1681	1741	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1691	1583	1681	1741	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	3074	209	567	2011	10	183	7	739	8	4	4
RTOR Reduction (vph)	0	0	89	0	0	2	0	0	124	0	0	0
Lane Group Flow (vph)	3	3074	120	567	2011	8	95	95	615	6	6	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	76.5	76.5	29.1	104.5	104.5	12.3	12.3	41.4	2.5	2.5	2.5
Effective Green, g (s)	1.1	76.5	76.5	29.1	104.5	104.5	12.3	12.3	41.4	2.5	2.5	2.5
Actuated g/C Ratio	0.01	0.56	0.56	0.21	0.77	0.77	0.09	0.09	0.30	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	27	2851	887	732	3895	1212	151	152	526	30	31	29
v/s Ratio Prot	0.00	c0.60		0.17	0.40		0.06	0.06	c0.25	c0.00	0.00	
v/s Ratio Perm			0.08			0.00			0.14			0.00
v/c Ratio	0.11	1.08	0.14	0.77	0.52	0.01	0.63	0.62	1.17	0.20	0.19	0.14
Uniform Delay, d1	67.2	30.0	14.2	50.6	6.2	3.7	59.9	59.8	47.5	66.0	66.0	65.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	42.4	0.1	5.1	0.1	0.0	8.0	7.8	95.1	3.3	3.0	2.2
Delay (s)	69.0	72.4	14.3	55.7	6.3	3.8	67.8	67.6	142.6	69.2	69.0	68.1
Level of Service	E	E	B	E	A	A	E	E	F	E	E	E
Approach Delay (s)		68.7			17.1			127.3			68.9	
Approach LOS		E			B			F			E	

Intersection Summary				
HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.13			
Actuated Cycle Length (s)	136.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	110.1%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	2106	1494	260	1261	39	1127	29	268	44	18	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	2289	1624	283	1371	42	1225	32	291	48	20	65
RTOR Reduction (vph)	0	0	139	0	0	26	0	0	89	0	0	61
Lane Group Flow (vph)	98	2289	1485	283	1371	16	1225	32	202	48	20	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	51.1	99.2	9.0	49.7	49.7	48.1	48.1	57.1	7.7	7.7	7.7
Effective Green, g (s)	10.4	51.1	99.2	9.0	49.7	49.7	48.1	48.1	57.1	7.7	7.7	7.7
Actuated g/C Ratio	0.08	0.39	0.75	0.07	0.38	0.38	0.36	0.36	0.43	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	139	1970	1190	234	1916	596	1251	679	733	103	108	92
v/s Ratio Prot	0.06	0.45	c0.45	c0.08	0.27		0.36	0.02	0.02	c0.03	0.01	
v/s Ratio Perm			0.48			0.01			0.11			0.00
v/c Ratio	0.71	1.16	1.25	1.21	0.72	0.03	0.98	0.05	0.28	0.47	0.19	0.04
Uniform Delay, d1	59.3	40.4	16.4	61.5	35.1	25.9	41.4	27.1	24.1	60.1	59.1	58.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	78.9	118.9	127.2	1.3	0.0	20.3	0.0	0.2	3.3	0.8	0.2
Delay (s)	74.3	119.3	135.2	188.6	36.4	25.9	61.7	27.1	24.3	63.4	59.9	58.8
Level of Service	E	F	F	F	D	C	E	C	C	E	E	E
Approach Delay (s)		124.7			61.5			54.0			60.6	
Approach LOS		F			E			D			E	

Intersection Summary				
HCM 2000 Control Delay	94.2	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.19			
Actuated Cycle Length (s)	131.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	113.3%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	133	1600	1061	49	97	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	1739	1153	53	105	170
RTOR Reduction (vph)	0	0	0	12	0	123
Lane Group Flow (vph)	145	1739	1153	41	105	47
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	8.9	126.1	113.2	113.2	13.3	22.2
Effective Green, g (s)	8.9	126.1	113.2	113.2	13.3	22.2
Actuated g/C Ratio	0.06	0.86	0.77	0.77	0.09	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	1593	1430	1215	159	281
v/s Ratio Prot	0.04	c0.93	0.62		c0.06	0.01
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.70	1.09	0.81	0.03	0.66	0.17
Uniform Delay, d1	67.9	10.7	10.4	4.1	64.9	54.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	51.9	3.4	0.0	9.8	0.3
Delay (s)	78.2	62.6	13.8	4.1	74.7	54.8
Level of Service	E	E	B	A	E	D
Approach Delay (s)		63.8	13.4		62.4	
Approach LOS		E	B		E	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	147.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	1559	2	6	1011	151	2	3	23	296	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1862		1770	1863	1583		1648			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1862		1770	1863	1583		1648			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1695	2	7	1099	164	2	3	25	322	0	111
RTOR Reduction (vph)	0	0	0	0	0	37	0	24	0	0	0	82
Lane Group Flow (vph)	129	1697	0	7	1099	127	0	6	0	0	322	29
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	13.3	99.8		0.8	87.3	87.3		6.5			20.0	20.0
Effective Green, g (s)	13.3	99.8		0.8	87.3	87.3		6.5			20.0	20.0
Actuated g/C Ratio	0.09	0.70		0.01	0.61	0.61		0.05			0.14	0.14
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	164	1298		9	1136	965		74			247	221
v/s Ratio Prot	c0.07	c0.91		0.00	0.59			c0.00			c0.18	
v/s Ratio Perm						0.08						0.02
v/c Ratio	0.79	1.31		0.78	0.97	0.13		0.08			1.30	0.13
Uniform Delay, d1	63.5	21.6		71.1	26.5	11.8		65.4			61.5	53.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	21.5	144.0		167.2	19.1	0.1		0.5			162.9	0.3
Delay (s)	85.1	165.6		238.2	45.7	11.9		65.9			224.4	54.2
Level of Service	F	F		F	D	B		E			F	D
Approach Delay (s)		160.0			42.4			65.9			180.8	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	119.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	143.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	372	1409	10	3	953	18	7	3	9	13	2	188
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	404	1532	11	3	1036	20	8	3	10	14	2	204
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1055			1542			3593	3408	1537	3404	3403	1046
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1055			1542			3593	3408	1537	3404	3403	1046
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	39			99			0	0	93	0	23	26
cM capacity (veh/h)	660			430			0	3	143	0	3	278

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	404	1542	3	1055	21	16	204
Volume Left	404	0	3	0	8	14	0
Volume Right	0	11	0	20	10	0	204
cSH	660	1700	430	1700	0	0	278
Volume to Capacity	0.61	0.91	0.01	0.62	47.39	Err	0.74
Queue Length 95th (ft)	105	0	1	0	Err	Err	133
Control Delay (s)	18.7	0.0	13.4	0.0	Err	Err	47.0
Lane LOS	C		B		F	F	E
Approach Delay (s)	3.9		0.0		Err	Err	
Approach LOS					F	F	

Intersection Summary				
Average Delay		Err		
Intersection Capacity Utilization		95.5%	ICU Level of Service	F
Analysis Period (min)		15		

7: Proctor Valley Rd./Jefferson Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	279	951	280	29	650	80	126	100	77	77	93	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1762			1700	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.52			0.84	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		929			1449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	303	1034	304	32	707	87	137	109	84	84	101	261
RTOR Reduction (vph)	0	0	24	0	0	45	0	9	0	0	39	0
Lane Group Flow (vph)	303	1034	280	32	707	42	0	321	0	0	407	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	23.0	72.0	72.0	3.2	52.2	52.2		42.0			42.0	
Effective Green, g (s)	23.0	72.0	72.0	3.2	52.2	52.2		42.0			42.0	
Actuated g/C Ratio	0.18	0.56	0.56	0.02	0.40	0.40		0.33			0.33	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	315	1038	882	43	752	639		301			471	
v/s Ratio Prot	c0.17	c0.56		0.02	0.38							
v/s Ratio Perm			0.18			0.03		c0.35			0.28	
v/c Ratio	0.96	1.00	0.32	0.74	0.94	0.07		1.06			0.86	
Uniform Delay, d1	52.7	28.5	15.4	62.6	37.0	23.6		43.6			40.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	40.3	26.8	0.2	50.5	19.7	0.0		70.1			15.1	
Delay (s)	93.0	55.3	15.6	113.1	56.7	23.6		113.7			56.0	
Level of Service	F	E	B	F	E	C		F			E	
Approach Delay (s)		54.9			55.4			113.7			56.0	
Approach LOS		D			E			F			E	

Intersection Summary				
HCM 2000 Control Delay		61.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio		1.03		
Actuated Cycle Length (s)		129.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization		96.7%	ICU Level of Service	F
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	32	13	680	1051	58
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	35	14	739	1142	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1941	1174	1205			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1941	1174	1205			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	38	85	98			
cM capacity (veh/h)	70	234	579			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	78	14	739	1205
Volume Left	43	14	0	0
Volume Right	35	0	0	63
cSH	102	579	1700	1700
Volume to Capacity	0.77	0.02	0.43	0.71
Queue Length 95th (ft)	104	2	0	0
Control Delay (s)	111.2	11.4	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	111.2	0.2		0.0
Approach LOS	F			

Intersection Summary				
Average Delay		4.4		
Intersection Capacity Utilization		69.7%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	4	24	3	0	49	24	586	4	57	875	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	4	26	3	0	53	26	637	4	62	951	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1838	1787	970	1813	1803	639	988			641		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1838	1787	970	1813	1803	639	988			641		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	22	94	92	93	100	89	96			93		
cM capacity (veh/h)	48	73	307	49	71	476	699			943		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	67	57	667	1050
Volume Left	37	3	26	62
Volume Right	26	53	4	37
cSH	73	316	699	943
Volume to Capacity	0.92	0.18	0.04	0.07
Queue Length 95th (ft)	117	16	3	5
Control Delay (s)	179.9	18.8	1.0	1.9
Lane LOS	F	C	A	A
Approach Delay (s)	179.9	18.8	1.0	1.9
Approach LOS	F	C		

Intersection Summary				
Average Delay		8.6		
Intersection Capacity Utilization		87.3%	ICU Level of Service	E
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	387	85	96	226	456	437
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	92	104	246	496	475
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1188	733	971			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1188	733	971			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	78	85			
cM capacity (veh/h)	177	421	710			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	513	350	971
Volume Left	421	104	0
Volume Right	92	0	475
cSH	198	710	1700
Volume to Capacity	2.59	0.15	0.57
Queue Length 95th (ft)	1094	13	0
Control Delay (s)	767.0	4.6	0.0
Lane LOS	F	A	
Approach Delay (s)	767.0	4.6	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	215.5		
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	34	41	258	61	79	506
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	45	280	66	86	550
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1035	314			347	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1035	314			347	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	94			93	
cM capacity (veh/h)	239	727			1212	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	82	347	86	550
Volume Left	37	0	86	0
Volume Right	45	66	0	0
cSH	377	1700	1212	1700
Volume to Capacity	0.22	0.20	0.07	0.32
Queue Length 95th (ft)	20	0	6	0
Control Delay (s)	17.2	0.0	8.2	0.0
Lane LOS	C		A	
Approach Delay (s)	17.2	0.0	1.1	
Approach LOS	C			

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	152	112	77	173	412	120
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	165	122	84	188	448	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	868	513	578			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	868	513	578			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	44	78	92			
cM capacity (veh/h)	296	561	995			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	287	84	188	578
Volume Left	165	84	0	0
Volume Right	122	0	0	130
cSH	513	995	1700	1700
Volume to Capacity	0.56	0.08	0.11	0.34
Queue Length 95th (ft)	85	7	0	0
Control Delay (s)	23.8	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.8	2.8		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		6.7		
Intersection Capacity Utilization		51.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	119	1934	1657	292	310	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3460		1765	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3460		1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	2102	1801	317	337	166
RTOR Reduction (vph)	0	0	16	0	2	116
Lane Group Flow (vph)	129	2102	2102	0	352	33
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	7.0	66.0	55.0		16.0	16.0
Effective Green, g (s)	7.0	66.0	55.0		16.0	16.0
Actuated g/C Ratio	0.08	0.73	0.61		0.18	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	137	2595	2114		313	267
v/s Ratio Prot	0.07	c0.59	c0.61		c0.20	
v/s Ratio Perm						0.02
v/c Ratio	0.94	0.81	0.99		1.13	0.12
Uniform Delay, d1	41.3	7.9	17.3		37.0	31.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	59.0	2.0	18.1		89.2	0.2
Delay (s)	100.3	9.9	35.5		126.2	31.3
Level of Service	F	A	D		F	C
Approach Delay (s)		15.1	35.5		98.1	
Approach LOS		B	D		F	

Intersection Summary				
HCM 2000 Control Delay		32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio		1.02		
Actuated Cycle Length (s)		90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization		92.0%	ICU Level of Service	F
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1996	171	512	1796	41	139	13	585	6	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1699	1583	1681	1741	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1699	1583	1681	1741	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	2170	186	557	1952	45	151	14	636	7	4	5
RTOR Reduction (vph)	0	0	92	0	0	16	0	0	194	0	0	0
Lane Group Flow (vph)	76	2170	94	557	1952	29	82	83	442	5	6	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.0	45.6	45.6	18.3	57.9	57.9	8.1	8.1	26.4	2.3	2.3	2.3
Effective Green, g (s)	6.0	45.6	45.6	18.3	57.9	57.9	8.1	8.1	26.4	2.3	2.3	2.3
Actuated g/C Ratio	0.07	0.50	0.50	0.20	0.64	0.64	0.09	0.09	0.29	0.03	0.03	0.03
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	228	2567	799	695	3260	1015	150	152	532	42	44	40
v/s Ratio Prot	0.02	c0.43		0.16	0.38		0.05	0.05	c0.17	0.00	c0.00	
v/s Ratio Perm			0.06			0.02			0.11			0.00
v/c Ratio	0.33	0.85	0.12	0.80	0.60	0.03	0.55	0.55	0.83	0.12	0.14	0.12
Uniform Delay, d1	40.2	19.3	11.8	34.3	9.4	5.9	39.3	39.3	29.9	43.0	43.0	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	2.7	0.1	6.6	0.3	0.0	4.0	4.0	10.6	1.3	1.4	1.4
Delay (s)	41.1	22.0	11.8	40.9	9.7	5.9	43.4	43.3	40.5	44.3	44.4	44.4
Level of Service	D	C	B	D	A	A	D	D	D	D	D	D
Approach Delay (s)		21.9			16.5			41.1			44.4	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	88.1%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	1612	980	213	1235	31	1145	42	233	36	25	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	1752	1065	232	1342	34	1245	46	253	39	27	68
RTOR Reduction (vph)	0	0	140	0	0	22	0	0	107	0	0	64
Lane Group Flow (vph)	88	1752	925	232	1342	12	1245	46	146	39	27	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.7	44.1	89.2	9.0	44.4	44.4	45.1	45.1	54.1	6.9	6.9	6.9
Effective Green, g (s)	8.7	44.1	89.2	9.0	44.4	44.4	45.1	45.1	54.1	6.9	6.9	6.9
Actuated g/C Ratio	0.07	0.36	0.74	0.07	0.37	0.37	0.37	0.37	0.45	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	1851	1166	255	1864	580	1278	693	759	100	106	90
v/s Ratio Prot	0.05	c0.34	0.30	c0.07	0.26		c0.36	0.02	0.01	c0.02	0.01	
v/s Ratio Perm			0.29			0.01			0.08			0.00
v/c Ratio	0.69	0.95	0.79	0.91	0.72	0.02	0.97	0.07	0.19	0.39	0.25	0.04
Uniform Delay, d1	54.9	37.4	10.1	55.6	33.0	24.5	37.4	24.5	20.3	55.1	54.6	54.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	10.8	3.8	33.0	1.4	0.0	19.1	0.0	0.1	2.5	1.3	0.2
Delay (s)	70.0	48.1	13.9	88.6	34.4	24.5	56.5	24.5	20.4	57.6	55.9	54.2
Level of Service	E	D	B	F	C	C	E	C	C	E	E	D
Approach Delay (s)		36.2			42.0			49.7			55.5	
Approach LOS		D			D			D			E	

Intersection Summary				
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	121.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	86.6%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	955	962	4	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1038	1046	4	2	7
RTOR Reduction (vph)	0	0	0	1	0	6
Lane Group Flow (vph)	5	1038	1046	3	2	1
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	0.6	41.0	36.4	36.4	5.9	6.5
Effective Green, g (s)	0.6	41.0	36.4	36.4	5.9	6.5
Actuated g/C Ratio	0.01	0.75	0.66	0.66	0.11	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	37	1391	1235	1049	190	302
v/s Ratio Prot	0.00	c0.56	c0.56		c0.00	0.00
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.14	0.75	0.85	0.00	0.01	0.00
Uniform Delay, d1	26.9	4.0	7.1	3.1	21.9	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	2.2	5.6	0.0	0.0	0.0
Delay (s)	28.6	6.2	12.7	3.1	21.9	21.3
Level of Service	C	A	B	A	C	C
Approach Delay (s)		6.3	12.6		21.5	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	916	0	3	936	154	2	3	8	185	3	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.91			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1689			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1689			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	996	0	3	1017	167	2	3	9	201	3	76
RTOR Reduction (vph)	0	0	0	0	0	36	0	8	0	0	0	65
Lane Group Flow (vph)	65	996	0	3	1017	131	0	6	0	0	204	11
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	4.0	64.5		0.8	61.3	61.3		6.1			14.8	14.8
Effective Green, g (s)	4.0	64.5		0.8	61.3	61.3		6.1			14.8	14.8
Actuated g/C Ratio	0.04	0.63		0.01	0.60	0.60		0.06			0.14	0.14
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	69	1175		13	1117	949		100			257	229
v/s Ratio Prot	c0.04	c0.53		0.00	c0.55			c0.00			c0.11	
v/s Ratio Perm						0.08						0.01
v/c Ratio	0.94	0.85		0.23	0.91	0.14		0.06			0.79	0.05
Uniform Delay, d1	49.0	15.0		50.4	18.0	8.9		45.3			42.2	37.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	87.8	5.8		8.9	11.0	0.1		0.2			15.4	0.1
Delay (s)	136.8	20.8		59.3	29.0	9.0		45.6			57.6	37.7
Level of Service	F	C		E	C	A		D			E	D
Approach Delay (s)		27.9			26.3			45.6			52.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	186	941	8	7	906	24	7	0	7	6	0	188
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	202	1023	9	8	985	26	8	0	8	7	0	204
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1011			1032			2636	2458	1027	2448	2449	998
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1011			1032			2636	2458	1027	2448	2449	998
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	71			99			0	100	97	59	100	31
cM capacity (veh/h)	686			674			4	21	285	16	22	296

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	202	1032	8	1011	15	7	204
Volume Left	202	0	8	0	8	7	0
Volume Right	0	9	0	26	8	0	204
cSH	686	1700	674	1700	7	16	296
Volume to Capacity	0.29	0.61	0.01	0.59	2.09	0.41	0.69
Queue Length 95th (ft)	31	0	1	0	73	27	118
Control Delay (s)	12.4	0.0	10.4	0.0	1472.9	343.7	40.4
Lane LOS	B		B		F	F	E
Approach Delay (s)	2.0		0.1		1472.9	49.8	
Approach LOS					F	E	

Intersection Summary				
Average Delay		14.3		
Intersection Capacity Utilization		76.6%	ICU Level of Service	D
Analysis Period (min)		15		

7: Proctor Valley Rd./Jefferson Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	763	219	32	821	65	136	62	66	64	77	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1754			1797	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.74			0.79	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1336			1446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	829	238	35	892	71	148	67	72	70	84	21
RTOR Reduction (vph)	0	0	44	0	0	33	0	16	0	0	6	0
Lane Group Flow (vph)	20	829	194	35	892	38	0	271	0	0	169	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.3	34.3	34.3	1.3	34.3	34.3		16.8			16.8	
Effective Green, g (s)	1.3	34.3	34.3	1.3	34.3	34.3		16.8			16.8	
Actuated g/C Ratio	0.02	0.53	0.53	0.02	0.53	0.53		0.26			0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	35	992	843	35	992	843		348			377	
v/s Ratio Prot	0.01	0.45		c0.02	c0.48							
v/s Ratio Perm			0.12			0.02		c0.20			0.12	
v/c Ratio	0.57	0.84	0.23	1.00	0.90	0.04		0.78			0.45	
Uniform Delay, d1	31.3	12.7	8.0	31.6	13.5	7.2		22.1			19.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	20.6	6.2	0.1	152.1	10.8	0.0		10.8			0.9	
Delay (s)	51.8	18.9	8.2	183.7	24.3	7.2		32.9			20.8	
Level of Service	D	B	A	F	C	A		C			C	
Approach Delay (s)		17.1			28.7			32.9			20.8	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM 2000 Control Delay		23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio		0.86		
Actuated Cycle Length (s)		64.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization		71.2%	ICU Level of Service	C
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	15	7	791	914	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	16	8	860	993	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1877	1002	1010			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1877	1002	1010			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	94	99			
cM capacity (veh/h)	78	294	686			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	29	8	860	1010
Volume Left	13	8	0	0
Volume Right	16	0	0	16
cSH	132	686	1700	1700
Volume to Capacity	0.22	0.01	0.51	0.59
Queue Length 95th (ft)	20	1	0	0
Control Delay (s)	40.1	10.3	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	40.1	0.1		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	0	20	0	0	9	19	850	0	5	800	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	0	22	0	0	10	21	924	0	5	870	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1866	1856	880	1878	1866	924	890			924		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1866	1856	880	1878	1866	924	890			924		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	100	94	100	100	97	97			99		
cM capacity (veh/h)	52	71	346	50	70	327	761			739		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	34	10	945	896
Volume Left	12	0	21	5
Volume Right	22	10	0	21
cSH	116	327	761	739
Volume to Capacity	0.29	0.03	0.03	0.01
Queue Length 95th (ft)	28	2	2	1
Control Delay (s)	48.3	16.4	0.8	0.2
Lane LOS	E	C	A	A
Approach Delay (s)	48.3	16.4	0.8	0.2
Approach LOS	E	C		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	620	141	118	221	323	532
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	674	153	128	240	351	578
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1137	640	929			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1137	640	929			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	68	83			
cM capacity (veh/h)	184	475	736			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	827	368	929
Volume Left	674	128	0
Volume Right	153	0	578
cSH	208	736	1700
Volume to Capacity	3.98	0.17	0.55
Queue Length 95th (ft)	Err	16	0
Control Delay (s)	Err	5.2	0.0
Lane LOS	F	A	
Approach Delay (s)	Err	5.2	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3893.1		
Intersection Capacity Utilization	120.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	44	303	44	48	404
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	48	329	48	52	439
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	897	353			377	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	897	353			377	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	93			96	
cM capacity (veh/h)	297	690			1181	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	97	377	52	439
Volume Left	49	0	52	0
Volume Right	48	48	0	0
cSH	413	1700	1181	1700
Volume to Capacity	0.23	0.22	0.04	0.26
Queue Length 95th (ft)	22	0	3	0
Control Delay (s)	16.4	0.0	8.2	0.0
Lane LOS	C		A	
Approach Delay (s)	16.4	0.0	0.9	
Approach LOS	C			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	141	78	63	189	278	163
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	153	85	68	205	302	177
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	733	391	479			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	733	391	479			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	87	94			
cM capacity (veh/h)	363	658	1083			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	238	68	205	479
Volume Left	153	68	0	0
Volume Right	85	0	0	177
cSH	564	1083	1700	1700
Volume to Capacity	0.42	0.06	0.12	0.28
Queue Length 95th (ft)	52	5	0	0
Control Delay (s)	18.2	8.5	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.2	2.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	59	1385	2253	235	189	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.99		0.97	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3489		1732	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3489		1732	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	1505	2449	255	205	303
RTOR Reduction (vph)	0	0	6	0	8	53
Lane Group Flow (vph)	64	1505	2699	0	258	189
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	5.0	114.0	105.0		18.0	18.0
Effective Green, g (s)	5.0	114.0	105.0		18.0	18.0
Actuated g/C Ratio	0.04	0.81	0.75		0.13	0.13
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	63	2881	2616		222	193
v/s Ratio Prot	c0.04	0.43	c0.77		c0.15	
v/s Ratio Perm						0.13
v/c Ratio	1.02	0.52	1.03		1.16	0.98
Uniform Delay, d1	67.5	4.2	17.5		61.0	60.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	117.9	0.2	26.3		111.4	57.9
Delay (s)	185.4	4.4	43.8		172.4	118.7
Level of Service	F	A	D		F	F
Approach Delay (s)		11.8	43.8		146.8	
Approach LOS		B	D		F	

Intersection Summary			
HCM 2000 Control Delay	44.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1427	92	473	2107	14	271	7	550	4	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1551	100	514	2290	15	295	8	598	4	4	0
RTOR Reduction (vph)	0	0	59	0	0	6	0	0	346	0	0	0
Lane Group Flow (vph)	8	1551	41	514	2290	9	0	303	252	4	4	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.0	37.3	37.3	19.3	55.6	55.6		16.2	35.5	1.1	1.1	
Effective Green, g (s)	1.0	37.3	37.3	19.3	55.6	55.6		16.2	35.5	1.1	1.1	
Actuated g/C Ratio	0.01	0.41	0.41	0.21	0.62	0.62		0.18	0.39	0.01	0.01	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2109	656	737	3144	979		320	1224	20	21	
v/s Ratio Prot	0.00	0.30		c0.15	c0.45			c0.17	0.04	c0.00	0.00	
v/s Ratio Perm			0.03			0.01			0.05			
v/c Ratio	0.21	0.74	0.06	0.70	0.73	0.01		0.95	0.21	0.20	0.19	
Uniform Delay, d1	44.1	22.1	15.8	32.6	11.9	6.6		36.4	17.9	44.0	44.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	1.4	0.0	2.9	0.9	0.0		36.1	0.1	4.9	4.4	
Delay (s)	46.8	23.5	15.8	35.5	12.8	6.6		72.5	18.0	48.8	48.3	
Level of Service	D	C	B	D	B	A		E	B	D	D	
Approach Delay (s)		23.2			16.9			36.3			48.6	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	76.1%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	1033	954	207	1354	18	1298	42	298	10	12	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	1123	1037	225	1472	20	1411	46	324	11	13	40
RTOR Reduction (vph)	0	0	294	0	0	14	0	0	155	0	0	38
Lane Group Flow (vph)	78	1123	743	225	1472	6	1411	46	169	11	13	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.0	31.3	78.4	9.8	35.1	35.1	47.1	47.1	56.9	5.2	5.2	5.2
Effective Green, g (s)	6.0	31.3	78.4	9.8	35.1	35.1	47.1	47.1	56.9	5.2	5.2	5.2
Actuated g/C Ratio	0.05	0.29	0.72	0.09	0.32	0.32	0.43	0.43	0.52	0.05	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	97	1454	1997	307	1631	507	1478	802	881	84	88	75
v/s Ratio Prot	0.04	0.22	0.16	c0.07	c0.29		c0.41	0.02	0.02	0.01	c0.01	
v/s Ratio Perm			0.11			0.00			0.09			0.00
v/c Ratio	0.80	0.77	0.37	0.73	0.90	0.01	0.95	0.06	0.19	0.13	0.15	0.03
Uniform Delay, d1	51.1	35.8	6.0	48.5	35.5	25.3	30.1	18.2	14.0	49.9	50.0	49.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.6	2.6	0.1	8.7	7.4	0.0	14.0	0.0	0.1	0.7	0.8	0.1
Delay (s)	87.7	38.4	6.1	57.3	42.9	25.3	44.1	18.2	14.1	50.6	50.8	49.8
Level of Service	F	D	A	E	D	C	D	B	B	D	D	D
Approach Delay (s)		25.2			44.5			38.0			50.2	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	109.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	83.8%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	324	790	1111	288	118	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	352	859	1208	313	128	405
RTOR Reduction (vph)	0	0	0	111	0	63
Lane Group Flow (vph)	352	859	1208	202	128	342
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	10.0	76.1	62.1	62.1	12.0	22.0
Effective Green, g (s)	10.0	76.1	62.1	62.1	12.0	22.0
Actuated g/C Ratio	0.10	0.79	0.65	0.65	0.12	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	357	1475	1203	1022	221	428
v/s Ratio Prot	0.10	0.46	c0.65		0.07	c0.08
v/s Ratio Perm				0.13		0.13
v/c Ratio	0.99	0.58	1.00	0.20	0.58	0.80
Uniform Delay, d1	43.0	3.9	17.0	6.9	39.7	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.5	0.6	27.0	0.1	3.7	10.0
Delay (s)	86.5	4.5	44.0	7.0	43.3	45.0
Level of Service	F	A	D	A	D	D
Approach Delay (s)		28.3	36.3		44.6	
Approach LOS		C	D		D	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	801	0	4	1140	202	4	2	2	156	0	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3459			1756			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3459			1756			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	871	0	4	1239	220	4	2	2	170	0	284
RTOR Reduction (vph)	0	0	0	0	12	0	0	2	0	0	0	229
Lane Group Flow (vph)	132	871	0	4	1447	0	0	6	0	0	170	55
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	11.2	62.7		0.7	52.2			6.1			15.2	15.2
Effective Green, g (s)	11.2	62.7		0.7	52.2			6.1			15.2	15.2
Actuated g/C Ratio	0.11	0.62		0.01	0.52			0.06			0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	196	2203		12	1793			106			267	238
v/s Ratio Prot	c0.07	0.25		0.00	c0.42			c0.00			c0.10	
v/s Ratio Perm												0.03
v/c Ratio	0.67	0.40		0.33	0.81			0.06			0.64	0.23
Uniform Delay, d1	43.0	9.5		49.8	20.1			44.6			40.2	37.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	8.8	0.1		15.7	2.8			0.2			4.9	0.5
Delay (s)	51.8	9.6		65.4	22.9			44.8			45.1	38.1
Level of Service	D	A		E	C			D			D	D
Approach Delay (s)		15.2			23.0			44.8			40.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	765	8	9	981	7	12	2	5	12	3	384
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.96	1.00
Satd. Flow (prot)	1770	1860		1770	1861			1743			1790	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.87			0.85	1.00
Satd. Flow (perm)	1770	1860		1770	1861			1575			1583	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	832	9	10	1066	8	13	2	5	13	3	417
RTOR Reduction (vph)	0	0	0	0	0	0	0	4	0	0	0	164
Lane Group Flow (vph)	193	841	0	10	1074	0	0	16	0	0	16	253
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	10.0	64.4		0.8	55.2			15.6			15.6	15.6
Effective Green, g (s)	10.0	64.4		0.8	55.2			15.6			15.6	15.6
Actuated g/C Ratio	0.11	0.69		0.01	0.59			0.17			0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	190	1290		15	1106			264			266	266
v/s Ratio Prot	c0.11	0.45		0.01	c0.58							
v/s Ratio Perm								0.01			0.01	c0.16
v/c Ratio	1.02	0.65		0.67	0.97			0.06			0.06	0.95
Uniform Delay, d1	41.4	7.9		45.9	18.0			32.4			32.4	38.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	69.5	1.2		75.9	20.2			0.1			0.1	41.9
Delay (s)	110.9	9.1		121.7	38.3			32.5			32.5	80.1
Level of Service	F	A		F	D			C			C	F
Approach Delay (s)		28.1			39.0			32.5			78.3	
Approach LOS		C			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

7: Proctor Valley Rd./Jefferson Rd. & SR 94

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	592	94	12	668	72	270	101	22	83	94	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1787			1718	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.51			0.84	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		952			1456	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	643	102	13	726	78	293	110	24	90	102	188
RTOR Reduction (vph)	0	0	27	0	0	38	0	2	0	0	33	0
Lane Group Flow (vph)	126	643	75	13	726	40	0	425	0	0	347	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	8.0	51.8	51.8	1.6	45.4	45.4		47.0			47.0	
Effective Green, g (s)	8.0	51.8	51.8	1.6	45.4	45.4		47.0			47.0	
Actuated g/C Ratio	0.07	0.46	0.46	0.01	0.40	0.40		0.42			0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	125	858	729	25	752	639		398			608	
v/s Ratio Prot	c0.07	0.35		0.01	c0.39							
v/s Ratio Perm			0.05			0.03		c0.45			0.24	
v/c Ratio	1.01	0.75	0.10	0.52	0.97	0.06		1.07			0.57	
Uniform Delay, d1	52.2	25.0	17.1	55.0	32.7	20.5		32.7			25.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	82.6	3.6	0.1	18.1	24.4	0.0		64.5			1.3	
Delay (s)	134.8	28.6	17.2	73.2	57.1	20.5		97.2			26.3	
Level of Service	F	C	B	E	E	C		F			C	
Approach Delay (s)		42.6			53.9			97.2			26.3	
Approach LOS		D			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	5	7	745	613	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	5	8	810	666	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1498	673	679			
vC1, stage 1 conf vol	673					
vC2, stage 2 conf vol	825					
vCu, unblocked vol	1498	673	679			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	343	455	913			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	13	8	810	679
Volume Left	8	8	0	0
Volume Right	5	0	0	13
cSH	382	913	1700	1700
Volume to Capacity	0.03	0.01	0.48	0.40
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	14.7	9.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.7	0.1		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		49.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	0	23	3	0	46	16	587	8	53	492	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.87		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1708			1621		1770	1859		1770	1845	
Flt Permitted		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1758			1584		1770	1859		1770	1845	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	25	3	0	50	17	638	9	58	535	36
RTOR Reduction (vph)	0	57	0	0	50	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	3	0	0	3	0	17	646	0	58	568	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		2.2			2.2		0.7	24.8		1.5	25.6	
Effective Green, g (s)		2.2			2.2		0.7	24.8		1.5	25.6	
Actuated g/C Ratio		0.05			0.05		0.02	0.61		0.04	0.63	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		95			86		30	1138		65	1166	
v/s Ratio Prot							0.01	c0.35		c0.03	0.31	
v/s Ratio Perm		c0.00			0.00							
v/c Ratio		0.03			0.03		0.57	0.57		0.89	0.49	
Uniform Delay, d1		18.1			18.1		19.7	4.7		19.4	4.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.2		22.3	0.7		74.5	0.3	
Delay (s)		18.3			18.3		42.0	5.3		93.9	4.3	
Level of Service		B			B		D	A		F	A	
Approach Delay (s)		18.3			18.3			6.3			12.5	
Approach LOS		B			B			A			B	

Intersection Summary				
HCM 2000 Control Delay		10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio		0.54		
Actuated Cycle Length (s)		40.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization		54.6%	ICU Level of Service	A
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	147	32	76	428	240	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	160	35	83	465	261	374
RTOR Reduction (vph)	0	30	0	0	0	203
Lane Group Flow (vph)	160	5	83	465	261	171
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	5.6	5.6	2.2	22.8	16.6	16.6
Effective Green, g (s)	5.6	5.6	2.2	22.8	16.6	16.6
Actuated g/C Ratio	0.15	0.15	0.06	0.63	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	528	243	106	1166	849	721
v/s Ratio Prot			c0.05	c0.25	0.14	
v/s Ratio Perm	c0.05	0.00				0.11
v/c Ratio	0.30	0.02	0.78	0.40	0.31	0.24
Uniform Delay, d1	13.7	13.1	16.9	3.4	6.3	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	30.5	0.2	0.2	0.2
Delay (s)	14.0	13.1	47.3	3.6	6.5	6.2
Level of Service	B	B	D	A	A	A
Approach Delay (s)	13.8			10.2	6.3	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	36.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	72	479	24	19	171
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	78	521	26	21	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	761	534			547	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	761	534			547	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	82	86			98	
cM capacity (veh/h)	366	546			1023	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	143	547	21	186
Volume Left	65	0	21	0
Volume Right	78	26	0	0
cSH	446	1700	1023	1700
Volume to Capacity	0.32	0.32	0.02	0.11
Queue Length 95th (ft)	34	0	2	0
Control Delay (s)	16.8	0.0	8.6	0.0
Lane LOS	C		A	
Approach Delay (s)	16.8	0.0	0.9	
Approach LOS	C			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	98	75	103	397	202	119
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	82	112	432	220	129
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	940	284	349			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	940	284	349			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	89	91			
cM capacity (veh/h)	266	755	1210			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	188	112	432	349
Volume Left	107	112	0	0
Volume Right	82	0	0	129
cSH	469	1210	1700	1700
Volume to Capacity	0.40	0.09	0.25	0.21
Queue Length 95th (ft)	48	8	0	0
Control Delay (s)	20.0	8.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.0	1.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		4.3		
Intersection Capacity Utilization		39.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	46	735	47	12	14	963	642	53	16	537	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799	1583	1770	1863	1583	3433	3498		1770	1863	1583
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1799	1583	1770	1863	1583	3433	3498		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	50	799	51	13	15	1047	698	58	17	584	154
RTOR Reduction (vph)	0	0	147	0	0	14	0	4	0	0	0	82
Lane Group Flow (vph)	0	173	652	51	13	1	1047	752	0	17	584	72
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		14.3	49.5	7.3	7.3	10.2	35.2	71.3		2.9	39.0	39.0
Effective Green, g (s)		14.3	49.5	7.3	7.3	10.2	35.2	71.3		2.9	39.0	39.0
Actuated g/C Ratio		0.13	0.44	0.07	0.07	0.09	0.31	0.64		0.03	0.35	0.35
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		230	700	115	121	201	1080	2230		45	649	552
v/s Ratio Prot		0.10	c0.29	c0.03	0.01	0.00	c0.30	0.21		0.01	c0.31	
v/s Ratio Perm			0.12			0.00						0.05
v/c Ratio		0.75	0.93	0.44	0.11	0.01	0.97	0.34		0.38	0.90	0.13
Uniform Delay, d1		47.0	29.6	50.3	49.2	46.2	37.8	9.3		53.6	34.5	24.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		13.0	19.2	2.7	0.4	0.0	20.1	0.4		5.2	17.8	0.5
Delay (s)		60.0	48.8	53.0	49.6	46.2	57.9	9.8		58.8	52.4	25.3
Level of Service		E	D	D	D	D	E	A		E	D	C
Approach Delay (s)		50.8			51.2			37.7			47.0	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM 2000 Control Delay		43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio		0.89		
Actuated Cycle Length (s)		111.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization		87.1%	ICU Level of Service	E
Analysis Period (min)		15		
c Critical Lane Group				

SR 94 Improvement Project — Near Term (2015) Weekday with Project Alt 1-2

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	638	377	240	838	36	596	111	256	37	57	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	693	410	261	911	39	648	121	278	40	62	70
RTOR Reduction (vph)	0	0	240	0	0	28	0	0	158	0	0	51
Lane Group Flow (vph)	68	693	170	261	911	11	648	121	120	40	62	19
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.3	15.9	27.9	5.0	18.6	18.6	12.0	28.9	28.9	1.6	18.5	18.5
Effective Green, g (s)	2.3	15.9	27.9	5.0	18.6	18.6	12.0	28.9	28.9	1.6	18.5	18.5
Actuated g/C Ratio	0.03	0.24	0.41	0.07	0.28	0.28	0.18	0.43	0.43	0.02	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	1199	749	254	1403	436	611	798	678	81	511	434
v/s Ratio Prot	0.02	0.14	0.04	c0.08	c0.18		c0.19	0.06		0.01	0.03	
v/s Ratio Perm			0.07			0.01			c0.08			0.01
v/c Ratio	0.58	0.58	0.23	1.03	0.65	0.02	1.06	0.15	0.18	0.49	0.12	0.04
Uniform Delay, d1	32.1	22.8	12.8	31.2	21.5	17.8	27.7	11.8	11.9	32.5	18.4	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.7	0.2	63.8	1.0	0.0	53.5	0.4	0.6	4.7	0.5	0.2
Delay (s)	39.2	23.5	12.9	95.0	22.6	17.8	81.2	12.2	12.5	37.2	18.8	18.1
Level of Service	D	C	B	F	C	B	F	B	B	D	B	B
Approach Delay (s)		20.7			38.0			55.0			22.8	
Approach LOS		C			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	53.2%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project — Near Term (2015) Weekday with Project Alt 1-2

15: Steele Canyon Rd. & Willow Glen Dr.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	223	452	269	220	14	661	51	230	7	72	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.88			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3508		1770	1634			1816	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3508		1770	1634			1816	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	242	491	292	239	15	718	55	250	8	78	16
RTOR Reduction (vph)	0	0	158	0	4	0	0	152	0	0	7	0
Lane Group Flow (vph)	9	242	333	292	250	0	718	153	0	0	95	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.7	18.2	55.5	15.1	32.6		37.3	37.3			8.6	
Effective Green, g (s)	0.7	18.2	55.5	15.1	32.6		37.3	37.3			8.6	
Actuated g/C Ratio	0.01	0.19	0.58	0.16	0.34		0.39	0.39			0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	13	356	989	280	1201		693	640			164	
v/s Ratio Prot	0.01	c0.13	0.13	c0.17	0.07		c0.41	0.09			c0.05	
v/s Ratio Perm			0.08									
v/c Ratio	0.69	0.68	0.34	1.04	0.21		1.04	0.24			0.58	
Uniform Delay, d1	47.1	35.8	10.3	40.1	22.2		29.0	19.4			41.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	96.3	5.1	0.2	65.4	0.1		43.9	0.9			4.9	
Delay (s)	143.4	40.9	10.5	105.5	22.2		72.8	20.3			46.4	
Level of Service	F	D	B	F	C		E	C			D	
Approach Delay (s)		22.0			66.7			57.1			46.4	
Approach LOS		C			E			E			D	

Intersection Summary				
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	79.9%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	168	674	318	204	569	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	733	346	222	618	367
RTOR Reduction (vph)	0	603	0	161	0	0
Lane Group Flow (vph)	183	130	346	61	618	367
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	12.8	12.8	19.8	19.8	27.3	51.1
Effective Green, g (s)	12.8	12.8	19.8	19.8	27.3	51.1
Actuated g/C Ratio	0.18	0.18	0.28	0.28	0.38	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	281	513	435	672	1324
v/s Ratio Prot	c0.10		c0.19		c0.35	0.20
v/s Ratio Perm		0.08		0.04		
v/c Ratio	0.58	0.46	0.67	0.14	0.92	0.28
Uniform Delay, d1	27.1	26.5	23.2	19.6	21.3	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	1.2	6.9	0.7	17.6	0.5
Delay (s)	29.8	27.7	30.1	20.3	38.9	4.3
Level of Service	C	C	C	C	D	A
Approach Delay (s)	28.1		26.3			26.0
Approach LOS	C		C			C

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	92	323	536	131	54	117
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	351	583	142	59	127
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	583				1134	583
vC1, stage 1 conf vol					583	
vC2, stage 2 conf vol					551	
vCu, unblocked vol	583				1134	583
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	90				86	75
cM capacity (veh/h)	992				415	512

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	100	351	583	142	186
Volume Left	100	0	0	0	59
Volume Right	0	0	0	142	127
cSH	992	1700	1700	1700	477
Volume to Capacity	0.10	0.21	0.34	0.08	0.39
Queue Length 95th (ft)	8	0	0	0	46
Control Delay (s)	9.0	0.0	0.0	0.0	17.3
Lane LOS	A				C
Approach Delay (s)	2.0		0.0		17.3
Approach LOS					C

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	119	25	372	357	51	324
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	27	404	388	55	352
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			157		1340	143
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			157		1340	143
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			72		54	61
cM capacity (veh/h)			1423		121	905

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	157	404	388	408
Volume Left	0	404	0	55
Volume Right	27	0	0	352
cSH	1700	1423	1700	480
Volume to Capacity	0.09	0.28	0.23	0.85
Queue Length 95th (ft)	0	29	0	216
Control Delay (s)	0.0	8.5	0.0	42.0
Lane LOS		A		E
Approach Delay (s)	0.0	4.4		42.0
Approach LOS				E

Intersection Summary			
Average Delay	15.2		
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	237	38	38	8	7	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	258	41	41	9	8	76

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	299	50	84
Volume Left (vph)	258	0	8
Volume Right (vph)	0	9	76
Hadj (s)	0.21	-0.07	-0.49
Departure Headway (s)	4.4	4.3	4.2
Degree Utilization, x	0.36	0.06	0.10
Capacity (veh/h)	812	791	791
Control Delay (s)	9.8	7.6	7.7
Approach Delay (s)	9.8	7.6	7.7
Approach LOS	A	A	A

Intersection Summary			
Delay	9.1		
Level of Service	A		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	967	10	6	1409	21	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1051	11	7	1532	23	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1062		2601	1057
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1062		2601	1057
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		16	92
cM capacity (veh/h)			656		27	274

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1062	1538	45
Volume Left	0	7	23
Volume Right	11	0	22
cSH	1700	656	48
Volume to Capacity	0.62	0.01	0.92
Queue Length 95th (ft)	0	1	97
Control Delay (s)	0.0	1.1	239.5
Lane LOS		A	F
Approach Delay (s)	0.0	1.1	239.5
Approach LOS			F

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	207	2303	1821	339	382	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3456		1765	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3456		1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	225	2503	1979	368	415	211
RTOR Reduction (vph)	0	0	13	0	2	134
Lane Group Flow (vph)	225	2503	2334	0	434	56
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.0	91.0	75.0		21.0	21.0
Effective Green, g (s)	12.0	91.0	75.0		21.0	21.0
Actuated g/C Ratio	0.10	0.76	0.62		0.18	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	2683	2160		308	263
v/s Ratio Prot	c0.13	0.71	c0.68		c0.25	
v/s Ratio Perm						0.04
v/c Ratio	1.27	0.93	1.08		1.41	0.21
Uniform Delay, d1	54.0	12.0	22.5		49.5	42.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	158.7	6.8	45.3		202.9	0.4
Delay (s)	212.7	18.7	67.8		252.4	42.8
Level of Service	F	B	E		F	D
Approach Delay (s)		34.7	67.8		188.8	
Approach LOS		C	E		F	

Intersection Summary			
HCM 2000 Control Delay	65.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

SR 94 Improvement Project
2: Jamacha Blvd. & SR 94

Near Term (2015) with Project Alt 1-2 Friday
Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2448	201	603	1948	7	181	3	766	9	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1775	2787	1681	1720	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1775	2787	1681	1720	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	2661	218	655	2117	8	197	3	833	10	3	2
RTOR Reduction (vph)	0	0	108	0	0	2	0	0	220	0	0	0
Lane Group Flow (vph)	8	2661	110	655	2117	6	0	200	613	6	7	2
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.2	67.7	67.7	31.6	98.1	98.1		16.1	47.7	2.5	2.5	2.5
Effective Green, g (s)	1.2	67.7	67.7	31.6	98.1	98.1		16.1	47.7	2.5	2.5	2.5
Actuated g/C Ratio	0.01	0.51	0.51	0.24	0.73	0.73		0.12	0.36	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	30	2570	800	810	3725	1159		213	1076	31	32	29
v/s Ratio Prot	0.00	c0.52		c0.19	0.42			c0.11	c0.13	0.00	c0.00	
v/s Ratio Perm			0.07			0.00			0.09			0.00
v/c Ratio	0.27	1.04	0.14	0.81	0.57	0.01		0.94	0.57	0.19	0.22	0.07
Uniform Delay, d1	65.9	33.1	17.6	48.3	8.2	4.8		58.4	34.8	64.7	64.7	64.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	27.7	0.1	6.0	0.2	0.0		44.2	0.7	3.0	3.4	1.0
Delay (s)	70.6	60.8	17.7	54.3	8.4	4.8		102.6	35.6	67.7	68.2	65.6
Level of Service	E	E	B	D	A	A		F	D	E	E	E
Approach Delay (s)		57.6			19.2			48.5			67.7	
Approach LOS		E			B			D			E	

Intersection Summary				
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	91.4%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project
3: SR 94 & Jamacha Rd. & Dwy

Near Term (2015) with Project Alt 1-2 Friday
Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	1978	1251	268	1382	50	1155	34	272	52	40	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	2150	1360	291	1502	54	1255	37	296	57	43	87
RTOR Reduction (vph)	0	0	175	0	0	33	0	0	72	0	0	81
Lane Group Flow (vph)	125	2150	1185	291	1502	21	1255	37	224	57	43	6
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.2	58.1	107.1	11.0	55.9	55.9	49.0	49.0	60.0	10.0	10.0	10.0
Effective Green, g (s)	13.2	58.1	107.1	11.0	55.9	55.9	49.0	49.0	60.0	10.0	10.0	10.0
Actuated g/C Ratio	0.09	0.40	0.74	0.08	0.39	0.39	0.34	0.34	0.42	0.07	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	2050	2071	262	1972	614	1167	633	703	122	129	109
v/s Ratio Prot	0.07	c0.42	0.19	c0.08	0.30		c0.37	0.02	0.02	c0.03	0.02	
v/s Ratio Perm			0.23			0.01			0.12			0.00
v/c Ratio	0.77	1.05	0.57	1.11	0.76	0.03	1.08	0.06	0.32	0.47	0.33	0.06
Uniform Delay, d1	64.0	43.0	8.3	66.5	38.3	27.4	47.5	32.0	28.3	64.5	63.9	62.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.0	34.1	0.4	88.6	1.8	0.0	49.1	0.0	0.3	2.8	1.5	0.2
Delay (s)	84.0	77.1	8.7	155.1	40.1	27.4	96.7	32.1	28.6	67.3	65.4	62.9
Level of Service	F	E	A	F	D	C	F	C	C	E	E	E
Approach Delay (s)		51.7			57.9			82.5			64.8	
Approach LOS		D			E			F			E	

Intersection Summary				
HCM 2000 Control Delay	60.4	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	144.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	95.5%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	92	1346	955	47	68	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1463	1038	51	74	130
RTOR Reduction (vph)	0	0	0	14	0	110
Lane Group Flow (vph)	100	1463	1038	37	74	20
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	5.0	76.1	67.1	67.1	9.2	14.2
Effective Green, g (s)	5.0	76.1	67.1	67.1	9.2	14.2
Actuated g/C Ratio	0.05	0.82	0.72	0.72	0.10	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1519	1339	1138	174	308
v/s Ratio Prot	0.03	c0.79	0.56		c0.04	0.00
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.55	0.96	0.78	0.03	0.43	0.06
Uniform Delay, d1	43.0	7.4	8.3	3.8	39.6	33.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	15.1	2.9	0.0	1.7	0.1
Delay (s)	46.4	22.5	11.2	3.8	41.2	33.9
Level of Service	D	C	B	A	D	C
Approach Delay (s)		24.1	10.8		36.6	
Approach LOS		C	B		D	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1256	2	6	862	170	2	4	21	297	6	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	1770	3538		1770	3452			1658			1776	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (perm)	1770	3538		1770	3452			1658			1776	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1365	2	7	937	185	2	4	23	323	7	117
RTOR Reduction (vph)	0	0	0	0	14	0	0	22	0	0	0	72
Lane Group Flow (vph)	122	1367	0	7	1108	0	0	7	0	0	330	45
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	11.1	51.4		0.7	41.0			6.3			24.2	24.2
Effective Green, g (s)	11.1	51.4		0.7	41.0			6.3			24.2	24.2
Actuated g/C Ratio	0.11	0.52		0.01	0.42			0.06			0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	199	1844		12	1435			105			435	388
v/s Ratio Prot	c0.07	c0.39		0.00	0.32			c0.00			c0.19	
v/s Ratio Perm												0.03
v/c Ratio	0.61	0.74		0.58	0.77			0.07			0.76	0.12
Uniform Delay, d1	41.7	18.4		48.8	24.8			43.4			34.5	28.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	5.5	1.6		56.2	2.6			0.3			7.4	0.1
Delay (s)	47.2	20.1		105.0	27.4			43.7			41.9	29.0
Level of Service	D	C		F	C			D			D	C
Approach Delay (s)		22.3			27.9			43.7			38.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	336	1211	15	6	870	18	7	2	5	15	2	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.96	1.00
Satd. Flow (prot)	1770	1859		1770	1857			1733			1783	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.86			0.76	1.00
Satd. Flow (perm)	1770	1859		1770	1857			1531			1422	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	365	1316	16	7	946	20	8	2	5	16	2	209
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	0	192
Lane Group Flow (vph)	365	1332	0	7	965	0	0	10	0	0	18	17
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	20.0	74.6		0.8	55.4			7.8			7.8	7.8
Effective Green, g (s)	20.0	74.6		0.8	55.4			7.8			7.8	7.8
Actuated g/C Ratio	0.21	0.78		0.01	0.58			0.08			0.08	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	371	1456		14	1080			125			116	129
v/s Ratio Prot	c0.21	c0.72		0.00	0.52							
v/s Ratio Perm								0.01			c0.01	0.01
v/c Ratio	0.98	0.91		0.50	0.89			0.08			0.16	0.13
Uniform Delay, d1	37.4	7.9		47.0	17.3			40.4			40.6	40.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	42.1	9.2		25.4	9.6			0.3			0.6	0.5
Delay (s)	79.5	17.0		72.4	26.9			40.7			41.3	41.0
Level of Service	E	B		E	C			D			D	D
Approach Delay (s)		30.5			27.3			40.7			41.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	85.0%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

7: Proctor Valley Rd./Jefferson Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	956	314	33	760	72	149	112	120	93	107	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1750			1800	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.73			0.66	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1309			1218	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	1039	341	36	826	78	162	122	130	101	116	24
RTOR Reduction (vph)	0	0	35	0	0	34	0	16	0	0	4	0
Lane Group Flow (vph)	30	1039	306	36	826	44	0	398	0	0	237	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	2.3	55.1	55.1	2.3	55.1	55.1		29.0			29.0	
Effective Green, g (s)	2.3	55.1	55.1	2.3	55.1	55.1		29.0			29.0	
Actuated g/C Ratio	0.02	0.56	0.56	0.02	0.56	0.56		0.29			0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	41	1043	886	41	1043	886		385			358	
v/s Ratio Prot	0.02	c0.56		c0.02	0.44							
v/s Ratio Perm			0.19			0.03		c0.30			0.19	
v/c Ratio	0.73	1.00	0.35	0.88	0.79	0.05		1.03			0.66	
Uniform Delay, d1	47.7	21.5	11.8	47.9	17.1	9.8		34.7			30.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	49.4	26.7	0.2	92.9	4.2	0.0		54.7			4.5	
Delay (s)	97.2	48.3	12.0	140.9	21.3	9.8		89.4			34.9	
Level of Service	F	D	B	F	C	A		F			C	
Approach Delay (s)		40.6			24.9			89.4			34.9	
Approach LOS		D			C			F			C	

Intersection Summary				
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	83.9%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	28	5	839	1087	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	30	5	912	1182	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2121	1198	1215			
vC1, stage 1 conf vol	1198					
vC2, stage 2 conf vol	923					
vCu, unblocked vol	2121	1198	1215			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	87	99			
cM capacity (veh/h)	228	226	574			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	58	5	912	1215
Volume Left	27	5	0	0
Volume Right	30	0	0	34
cSH	227	574	1700	1700
Volume to Capacity	0.25	0.01	0.54	0.71
Queue Length 95th (ft)	24	1	0	0
Control Delay (s)	26.2	11.3	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	26.2	0.1		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	0	19	4	0	9	25	819	0	5	1036	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1659		1770	1863		1770	1859	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1720			1683		1770	1863		1770	1859	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	21	4	0	10	27	890	0	5	1126	17
RTOR Reduction (vph)	0	36	0	0	14	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	0	0	27	890	0	5	1142	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		1.0			1.0		0.7	27.3		0.7	27.3	
Effective Green, g (s)		1.0			1.0		0.7	27.3		0.7	27.3	
Actuated g/C Ratio		0.02			0.02		0.02	0.67		0.02	0.67	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		41			41		30	1240		30	1237	
v/s Ratio Prot							c0.02	0.48		0.00	c0.61	
v/s Ratio Perm		c0.00			0.00							
v/c Ratio		0.02			0.01		0.90	0.72		0.17	0.92	
Uniform Delay, d1		19.5			19.5		20.1	4.4		19.9	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.1		122.1	2.0		2.6	11.5	
Delay (s)		19.7			19.6		142.2	6.4		22.5	17.4	
Level of Service		B			B		F	A		C	B	
Approach Delay (s)		19.7			19.6			10.4			17.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	620	136	116	189	545	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	148	126	205	592	575
RTOR Reduction (vph)	0	104	0	0	0	373
Lane Group Flow (vph)	674	44	126	205	592	202
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	13.7	13.7	4.0	24.1	16.1	16.1
Effective Green, g (s)	13.7	13.7	4.0	24.1	16.1	16.1
Actuated g/C Ratio	0.30	0.30	0.09	0.53	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1026	473	154	980	654	556
v/s Ratio Prot			c0.07	0.11	c0.32	
v/s Ratio Perm	c0.20	0.03				0.13
v/c Ratio	0.66	0.09	0.82	0.21	0.91	0.36
Uniform Delay, d1	14.0	11.6	20.5	5.8	14.1	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	27.4	0.1	16.0	0.4
Delay (s)	15.5	11.7	48.0	5.9	30.2	11.4
Level of Service	B	B	D	A	C	B
Approach Delay (s)	14.8			21.9	20.9	
Approach LOS	B			C	C	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	40	34	346	64	72	580
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	37	376	70	78	630
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1198	411			446	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1198	411			446	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	94			93	
cM capacity (veh/h)	191	641			1115	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	80	446	78	630
Volume Left	43	0	78	0
Volume Right	37	70	0	0
cSH	282	1700	1115	1700
Volume to Capacity	0.29	0.26	0.07	0.37
Queue Length 95th (ft)	29	0	6	0
Control Delay (s)	22.8	0.0	8.5	0.0
Lane LOS	C		A	
Approach Delay (s)	22.8	0.0	0.9	
Approach LOS	C			

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	153	147	67	148	519	187
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	160	73	161	564	203
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	972	666	767			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	972	666	767			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	65	91			
cM capacity (veh/h)	256	460	846			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	326	73	161	767
Volume Left	166	73	0	0
Volume Right	160	0	0	203
cSH	443	846	1700	1700
Volume to Capacity	0.74	0.09	0.09	0.45
Queue Length 95th (ft)	148	7	0	0
Control Delay (s)	32.5	9.7	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	32.5	3.0		0.0
Approach LOS	D			

Intersection Summary				
Average Delay		8.5		
Intersection Capacity Utilization		60.9%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	13	892	73	40	19	470	703	14	4	846	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1780	1583	1770	1863	1583	3433	3529		1770	1863	1583
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1780	1583	1770	1863	1583	3433	3529		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	14	970	79	43	21	511	764	15	4	920	141
RTOR Reduction (vph)	0	0	73	0	0	19	0	1	0	0	0	57
Lane Group Flow (vph)	0	194	897	79	43	2	511	778	0	4	920	84
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		16.0	61.0	11.7	11.7	14.1	45.0	101.3		2.4	58.7	58.7
Effective Green, g (s)		16.0	61.0	11.7	11.7	14.1	45.0	101.3		2.4	58.7	58.7
Actuated g/C Ratio		0.11	0.41	0.08	0.08	0.10	0.31	0.69		0.02	0.40	0.40
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		193	655	140	147	194	1048	2425		28	741	630
v/s Ratio Prot		0.11	c0.42	c0.04	0.02	0.00	0.15	0.22		0.00	c0.49	
v/s Ratio Perm			0.15			0.00						0.05
v/c Ratio		1.01	1.37	0.56	0.29	0.01	0.49	0.32		0.14	1.24	0.13
Uniform Delay, d1		65.7	43.2	65.4	63.9	60.3	41.8	9.2		71.5	44.4	28.2
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		66.1	176.1	5.1	1.1	0.0	0.4	0.4		2.3	120.0	0.4
Delay (s)		131.8	219.3	70.5	65.1	60.4	42.1	9.6		73.8	164.4	28.6
Level of Service		F	F	E	E	E	D	A		E	F	C
Approach Delay (s)		204.7			67.4			22.5			146.1	
Approach LOS		F			E			C			F	

Intersection Summary				
HCM 2000 Control Delay		118.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio		1.24		
Actuated Cycle Length (s)		147.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization		113.8%	ICU Level of Service	H
Analysis Period (min)		15		
c Critical Lane Group				

SR 94 Improvement Project — Near Term (2015) with Project Alt 1-2 Friday

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	868	706	222	850	84	588	85	161	147	126	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	943	767	241	924	91	639	92	175	160	137	127
RTOR Reduction (vph)	0	0	260	0	0	69	0	0	108	0	0	93
Lane Group Flow (vph)	224	943	507	241	924	22	639	92	67	160	137	34
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	15.8	27.8	4.0	15.8	15.8	12.0	25.0	25.0	4.8	17.8	17.8
Effective Green, g (s)	4.0	15.8	27.8	4.0	15.8	15.8	12.0	25.0	25.0	4.8	17.8	17.8
Actuated g/C Ratio	0.06	0.24	0.42	0.06	0.24	0.24	0.18	0.38	0.38	0.07	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	1224	767	209	1224	381	627	709	603	251	505	429
v/s Ratio Prot	0.07	c0.19	0.12	c0.07	0.18		c0.19	0.05		0.05	c0.07	
v/s Ratio Perm			0.20			0.01			0.04			0.02
v/c Ratio	1.07	0.77	0.66	1.15	0.75	0.06	1.02	0.13	0.11	0.64	0.27	0.08
Uniform Delay, d1	30.8	23.2	15.1	30.8	23.1	19.2	26.8	13.2	13.1	29.6	18.8	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	82.6	3.1	2.1	109.7	2.7	0.1	40.8	0.4	0.4	5.2	1.3	0.4
Delay (s)	113.4	26.3	17.3	140.5	25.8	19.2	67.6	13.6	13.5	34.8	20.1	18.2
Level of Service	F	C	B	F	C	B	E	B	B	C	C	B
Approach Delay (s)		32.8			47.3			51.7			25.1	
Approach LOS		C			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	66.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project — Near Term (2015) with Project Alt 1-2 Friday

15: Steele Canyon Rd. & Willow Glen Dr.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	416	581	197	342	6	342	21	132	9	27	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.87			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	3529		1770	1622			1768	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1583	1770	3529		1770	1622			1768	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	452	632	214	372	7	372	23	143	10	29	18
RTOR Reduction (vph)	0	0	257	0	1	0	0	103	0	0	17	0
Lane Group Flow (vph)	13	452	375	214	378	0	372	63	0	0	40	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.7	25.5	47.8	12.0	36.8		22.3	22.3			4.7	
Effective Green, g (s)	0.7	25.5	47.8	12.0	36.8		22.3	22.3			4.7	
Actuated g/C Ratio	0.01	0.32	0.59	0.15	0.46		0.28	0.28			0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	15	590	1018	263	1613		490	449			103	
v/s Ratio Prot	0.01	c0.24	0.10	c0.12	0.11		c0.21	0.04			c0.02	
v/s Ratio Perm			0.13									
v/c Ratio	0.87	0.77	0.37	0.81	0.23		0.76	0.14			0.39	
Uniform Delay, d1	39.9	24.8	8.5	33.2	13.3		26.6	21.9			36.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	162.9	5.9	0.2	17.3	0.1		10.6	0.6			2.4	
Delay (s)	202.8	30.7	8.7	50.4	13.4		37.2	22.5			38.9	
Level of Service	F	C	A	D	B		D	C			D	
Approach Delay (s)		20.1			26.7			32.7			38.9	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	68.4%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	106	251	224	80	499	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	273	243	87	542	425
RTOR Reduction (vph)	0	231	0	62	0	0
Lane Group Flow (vph)	115	42	243	25	542	425
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	16.6	16.6	20.5	41.1
Effective Green, g (s)	9.0	9.0	16.6	16.6	20.5	41.1
Actuated g/C Ratio	0.15	0.15	0.29	0.29	0.35	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	245	532	452	624	1317
v/s Ratio Prot	c0.06		c0.13		c0.31	0.23
v/s Ratio Perm		0.03		0.02		
v/c Ratio	0.42	0.17	0.46	0.05	0.87	0.32
Uniform Delay, d1	22.2	21.3	17.0	15.1	17.5	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	2.8	0.2	12.3	0.6
Delay (s)	23.2	21.7	19.9	15.3	29.8	3.9
Level of Service	C	C	B	B	C	A
Approach Delay (s)	22.1		18.7			18.4
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	69	367	228	65	147	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	399	248	71	160	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	248				797	248
vC1, stage 1 conf vol					248	
vC2, stage 2 conf vol					549	
vCu, unblocked vol	248				797	248
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	94				68	91
cM capacity (veh/h)	1318				507	791

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	75	399	248	71	228
Volume Left	75	0	0	0	160
Volume Right	0	0	0	71	68
cSH	1318	1700	1700	1700	568
Volume to Capacity	0.06	0.23	0.15	0.04	0.40
Queue Length 95th (ft)	5	0	0	0	48
Control Delay (s)	7.9	0.0	0.0	0.0	15.5
Lane LOS	A				C
Approach Delay (s)	1.2		0.0		15.5
Approach LOS					C

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	271	4	144	196	7	172
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	295	4	157	213	8	187
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			299		823	297
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			299		823	297
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		97	75
cM capacity (veh/h)			1262		301	743

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	299	157	213	195
Volume Left	0	157	0	8
Volume Right	4	0	0	187
cSH	1700	1262	1700	702
Volume to Capacity	0.18	0.12	0.13	0.28
Queue Length 95th (ft)	0	11	0	28
Control Delay (s)	0.0	8.3	0.0	12.1
Lane LOS		A		B
Approach Delay (s)	0.0	3.5		12.1
Approach LOS				B

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	148	18	24	17	12	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	161	20	26	18	13	150

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	180	45	163
Volume Left (vph)	161	0	13
Volume Right (vph)	0	18	150
Hadj (s)	0.21	-0.21	-0.50
Departure Headway (s)	4.5	4.2	3.9
Degree Utilization, x	0.23	0.05	0.18
Capacity (veh/h)	772	798	869
Control Delay (s)	8.8	7.5	7.8
Approach Delay (s)	8.8	7.5	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	8.2		
Level of Service	A		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1605	42	12	1016	11	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1745	46	13	1104	12	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1790		2898	1767
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1790		2898	1767
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		29	86
cM capacity (veh/h)			345		17	104

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1790	1117	26
Volume Left	0	13	12
Volume Right	46	0	14
cSH	1700	345	31
Volume to Capacity	1.05	0.04	0.84
Queue Length 95th (ft)	0	3	71
Control Delay (s)	0.0	1.9	299.9
Lane LOS		A	F
Approach Delay (s)	0.0	1.9	299.9
Approach LOS			F

Intersection Summary			
Average Delay		3.4	
Intersection Capacity Utilization		97.0%	ICU Level of Service F
Analysis Period (min)		15	

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	20.2	115.8	1.46	45.4	A
Jamacha Blvd.	I	55	38.0	61.6	99.6	0.52	18.8	E
SR 94	I	55	38.1	3.1	41.2	0.58	50.9	A
Cougar Canyon Rd.	I	55	78.0	25.9	103.9	1.19	41.3	B
Steele Canyon Rd.	I	55	81.2	19.4	100.6	1.24	44.4	A
Indian Springs Dr.	I	55	124.6	16.7	141.3	1.90	48.5	A
Proctor Valley Rd.	I	55	29.0	45.9	74.9	0.33	16.0	F
Melody Rd.	I	55	56.9	11.9	68.8	0.87	45.5	A
Reservation Rd.	I	55	28.5	37.9	66.4	0.33	17.7	E
Total	I		569.9	242.6	812.5	8.43	37.4	B

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	7.1	268.9	4.00	53.5	A
Peacefull Valley Ran	I	55	28.5	9.4	37.9	0.33	31.1	C
Jefferson Rd.	I	55	56.9	23.5	80.4	0.87	38.9	B
Lyons Valley Rd.	I	55	29.0	33.8	62.8	0.33	19.1	E
Steele Canyon Rd.	I	55	124.6	30.4	155.0	1.90	44.2	A
Cougar Canyon Rd.	I	55	81.2	14.1	95.3	1.24	46.9	A
Jamacha Rd.	I	55	78.0	93.7	171.7	1.19	25.0	D
Jamacha Blvd.	I	55	38.1	7.6	45.7	0.58	45.8	A
Via Mercado	I	55	38.0	68.6	106.6	0.52	17.6	E
Total	I		736.1	288.2	1024.3	10.97	38.5	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	244	2753	1840	270	350	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3471		1768	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3471		1768	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	2992	2000	293	380	140
RTOR Reduction (vph)	0	0	9	0	1	101
Lane Group Flow (vph)	265	2992	2284	0	393	25
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	19.0	98.0	75.0		24.0	24.0
Effective Green, g (s)	19.0	98.0	75.0		24.0	24.0
Actuated g/C Ratio	0.15	0.75	0.58		0.18	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	258	2667	2002		326	277
v/s Ratio Prot	0.15	c0.85	0.66		c0.22	
v/s Ratio Perm						0.02
v/c Ratio	1.03	1.12	1.14		1.21	0.09
Uniform Delay, d1	55.5	16.0	27.5		53.0	43.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	63.2	60.5	70.0		118.1	0.1
Delay (s)	118.7	76.5	97.5		171.1	44.1
Level of Service	F	E	F		F	D
Approach Delay (s)		79.9	97.5		140.3	
Approach LOS		E	F		F	

Intersection Summary			
HCM 2000 Control Delay	91.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2828	192	522	1850	9	168	6	680	7	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1777	2787	1681	1741	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1777	2787	1681	1741	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	3074	209	567	2011	10	183	7	739	8	4	4
RTOR Reduction (vph)	0	0	91	0	0	3	0	0	216	0	0	0
Lane Group Flow (vph)	3	3074	118	567	2011	7	0	190	523	6	6	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.1	76.5	76.5	27.0	102.4	102.4		16.0	43.0	2.6	2.6	2.6
Effective Green, g (s)	1.1	76.5	76.5	27.0	102.4	102.4		16.0	43.0	2.6	2.6	2.6
Actuated g/C Ratio	0.01	0.55	0.55	0.20	0.74	0.74		0.12	0.31	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	27	2816	876	671	3770	1173		205	948	31	32	29
v/s Ratio Prot	0.00	c0.60		c0.17	0.40			c0.11	c0.11	c0.00	0.00	
v/s Ratio Perm			0.07			0.00			0.08			0.00
v/c Ratio	0.11	1.09	0.14	0.85	0.53	0.01		0.93	0.55	0.19	0.19	0.14
Uniform Delay, d1	68.0	30.8	14.9	53.5	7.6	4.6		60.5	39.5	66.7	66.7	66.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	47.8	0.1	9.6	0.1	0.0		42.4	0.7	3.0	2.8	2.2
Delay (s)	69.8	78.6	14.9	63.1	7.8	4.6		102.9	40.2	69.8	69.5	68.8
Level of Service	E	E	B	E	A	A		F	D	E	E	E
Approach Delay (s)		74.5			19.9			53.0			69.4	
Approach LOS		E			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	138.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	2106	1494	260	1261	39	1127	29	268	44	18	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	2289	1624	283	1371	42	1225	32	291	48	20	65
RTOR Reduction (vph)	0	0	244	0	0	26	0	0	89	0	0	61
Lane Group Flow (vph)	98	2289	1380	283	1371	16	1225	32	202	48	20	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	51.1	99.2	9.0	49.7	49.7	48.1	48.1	57.1	7.7	7.7	7.7
Effective Green, g (s)	10.4	51.1	99.2	9.0	49.7	49.7	48.1	48.1	57.1	7.7	7.7	7.7
Actuated g/C Ratio	0.08	0.39	0.75	0.07	0.38	0.38	0.36	0.36	0.43	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	139	1970	2096	234	1916	596	1251	679	733	103	108	92
v/s Ratio Prot	0.06	c0.45	0.24	c0.08	0.27		c0.36	0.02	0.02	c0.03	0.01	
v/s Ratio Perm			0.26			0.01			0.11			0.00
v/c Ratio	0.71	1.16	0.66	1.21	0.72	0.03	0.98	0.05	0.28	0.47	0.19	0.04
Uniform Delay, d1	59.3	40.4	8.0	61.5	35.1	25.9	41.4	27.1	24.1	60.1	59.1	58.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	78.9	0.8	127.2	1.3	0.0	20.3	0.0	0.2	3.3	0.8	0.2
Delay (s)	74.3	119.3	8.8	188.6	36.4	25.9	61.7	27.1	24.3	63.4	59.9	58.8
Level of Service	E	F	A	F	D	C	E	C	C	E	E	E
Approach Delay (s)		73.5			61.5			54.0			60.6	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	66.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	131.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	133	1600	1061	49	97	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	1739	1153	53	105	170
RTOR Reduction (vph)	0	0	0	12	0	123
Lane Group Flow (vph)	145	1739	1153	41	105	47
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	8.9	126.1	113.2	113.2	13.3	22.2
Effective Green, g (s)	8.9	126.1	113.2	113.2	13.3	22.2
Actuated g/C Ratio	0.06	0.86	0.77	0.77	0.09	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	1593	1430	1215	159	281
v/s Ratio Prot	0.04	c0.93	0.62		c0.06	0.01
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.70	1.09	0.81	0.03	0.66	0.17
Uniform Delay, d1	67.9	10.7	10.4	4.1	64.9	54.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	51.9	3.4	0.0	9.8	0.3
Delay (s)	78.2	62.6	13.8	4.1	74.7	54.8
Level of Service	E	E	B	A	E	D
Approach Delay (s)		63.8	13.4		62.4	
Approach LOS		E	B		E	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	147.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

SR 94 Improvement Project — Near Term (2015) Weekday with Project Alt 1-2

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	1559	2	6	1011	151	2	3	23	296	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3470			1648			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3470			1648			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1695	2	7	1099	164	2	3	25	322	0	111
RTOR Reduction (vph)	0	0	0	0	10	0	0	23	0	0	0	76
Lane Group Flow (vph)	129	1697	0	7	1253	0	0	7	0	0	322	35
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	12.5	60.9		0.6	49.0			6.4			20.5	20.5
Effective Green, g (s)	12.5	60.9		0.6	49.0			6.4			20.5	20.5
Actuated g/C Ratio	0.12	0.58		0.01	0.47			0.06			0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	211	2064		10	1628			101			347	310
v/s Ratio Prot	c0.07	c0.48		0.00	0.36			c0.00			c0.18	
v/s Ratio Perm												0.02
v/c Ratio	0.61	0.82		0.70	0.77			0.06			0.93	0.11
Uniform Delay, d1	43.6	17.4		51.8	23.0			46.2			41.2	34.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	5.2	2.8		117.6	2.3			0.3			30.2	0.2
Delay (s)	48.8	20.2		169.4	25.3			46.5			71.4	34.6
Level of Service	D	C		F	C			D			E	C
Approach Delay (s)		22.2			26.1			46.5			62.0	
Approach LOS		C			C			D			E	

Intersection Summary				
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	104.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	79.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project — Near Term (2015) Weekday with Project Alt 1-2

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	372	1409	10	3	953	18	7	3	9	13	2	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1770	1861		1770	1857			1710			1785	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.76	1.00
Satd. Flow (perm)	1770	1861		1770	1857			1555			1410	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	404	1532	11	3	1036	20	8	3	10	14	2	204
RTOR Reduction (vph)	0	0	0	0	0	0	0	9	0	0	0	192
Lane Group Flow (vph)	404	1543	0	3	1056	0	0	12	0	0	16	12
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	34.7	123.0		0.8	89.1			8.4			8.4	8.4
Effective Green, g (s)	34.7	123.0		0.8	89.1			8.4			8.4	8.4
Actuated g/C Ratio	0.24	0.85		0.01	0.62			0.06			0.06	0.06
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	425	1587		9	1147			90			82	92
v/s Ratio Prot	c0.23	c0.83		0.00	0.57							
v/s Ratio Perm								0.01			c0.01	0.01
v/c Ratio	0.95	0.97		0.33	0.92			0.13			0.20	0.13
Uniform Delay, d1	53.9	9.1		71.4	24.4			64.4			64.7	64.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	31.2	16.4		20.6	11.9			0.6			1.2	0.6
Delay (s)	85.1	25.5		92.0	36.3			65.1			65.8	65.1
Level of Service	F	C		F	D			E			E	E
Approach Delay (s)		37.9			36.4			65.1			65.1	
Approach LOS		D			D			E			E	

Intersection Summary				
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	144.2	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	95.5%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	279	951	280	29	650	80	126	100	77	77	93	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1762			1700	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.52			0.84	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		929			1449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	303	1034	304	32	707	87	137	109	84	84	101	261
RTOR Reduction (vph)	0	0	24	0	0	45	0	9	0	0	39	0
Lane Group Flow (vph)	303	1034	280	32	707	42	0	321	0	0	407	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	23.0	72.0	72.0	3.2	52.2	52.2		42.0			42.0	
Effective Green, g (s)	23.0	72.0	72.0	3.2	52.2	52.2		42.0			42.0	
Actuated g/C Ratio	0.18	0.56	0.56	0.02	0.40	0.40		0.33			0.33	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	315	1038	882	43	752	639		301			471	
v/s Ratio Prot	c0.17	c0.56		0.02	0.38							
v/s Ratio Perm			0.18			0.03		c0.35			0.28	
v/c Ratio	0.96	1.00	0.32	0.74	0.94	0.07		1.06			0.86	
Uniform Delay, d1	52.7	28.5	15.4	62.6	37.0	23.6		43.6			40.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	40.3	26.8	0.2	50.5	19.7	0.0		70.1			15.1	
Delay (s)	93.0	55.3	15.6	113.1	56.7	23.6		113.7			56.0	
Level of Service	F	E	B	F	E	C		F			E	
Approach Delay (s)		54.9			55.4			113.7			56.0	
Approach LOS		D			E			F			E	

Intersection Summary				
HCM 2000 Control Delay	61.1	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.03			
Actuated Cycle Length (s)	129.2	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	96.7%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	32	13	680	1051	58
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	35	14	739	1142	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1941	1174	1205			
vC1, stage 1 conf vol	1174					
vC2, stage 2 conf vol	767					
vCu, unblocked vol	1941	1174	1205			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	85	98			
cM capacity (veh/h)	247	234	579			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	78	14	739	1205
Volume Left	43	14	0	0
Volume Right	35	0	0	63
cSH	241	579	1700	1700
Volume to Capacity	0.32	0.02	0.43	0.71
Queue Length 95th (ft)	34	2	0	0
Control Delay (s)	27.0	11.4	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	27.0	0.2		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	4	24	3	0	49	24	586	4	57	875	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.87		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1718			1620		1770	1861		1770	1852	
Flt Permitted		1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1765			1584		1770	1861		1770	1852	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	4	26	3	0	53	26	637	4	62	951	37
RTOR Reduction (vph)	0	24	0	0	52	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	43	0	0	4	0	26	641	0	62	986	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		2.8			2.8		0.7	24.9		1.4	25.6	
Effective Green, g (s)		2.8			2.8		0.7	24.9		1.4	25.6	
Actuated g/C Ratio		0.07			0.07		0.02	0.61		0.03	0.62	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		120			107		30	1127		60	1153	
v/s Ratio Prot							0.01	0.34		c0.04	c0.53	
v/s Ratio Perm		c0.02			0.00							
v/c Ratio		0.36			0.04		0.87	0.57		1.03	0.86	
Uniform Delay, d1		18.3			17.9		20.2	4.9		19.9	6.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8			0.1		108.1	0.7		125.8	6.4	
Delay (s)		20.1			18.0		128.2	5.5		145.7	12.7	
Level of Service		C			B		F	A		F	B	
Approach Delay (s)		20.1			18.0			10.3			20.5	
Approach LOS		C			B			B			C	

Intersection Summary				
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	387	85	96	226	456	437
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	92	104	246	496	475
RTOR Reduction (vph)	0	69	0	0	0	294
Lane Group Flow (vph)	421	23	104	246	496	181
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	10.4	10.4	3.0	22.6	15.6	15.6
Effective Green, g (s)	10.4	10.4	3.0	22.6	15.6	15.6
Actuated g/C Ratio	0.25	0.25	0.07	0.55	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	870	401	129	1026	708	602
v/s Ratio Prot			c0.06	0.13	c0.27	
v/s Ratio Perm	c0.12	0.01				0.11
v/c Ratio	0.48	0.06	0.81	0.24	0.70	0.30
Uniform Delay, d1	13.0	11.6	18.7	4.8	10.7	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	29.5	0.1	3.1	0.3
Delay (s)	13.4	11.7	48.2	4.9	13.9	9.2
Level of Service	B	B	D	A	B	A
Approach Delay (s)	13.1			17.8	11.6	
Approach LOS	B			B	B	

Intersection Summary				
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	50.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	34	41	258	61	79	506
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	45	280	66	86	550
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1035	314			347	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1035	314			347	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	94			93	
cM capacity (veh/h)	239	727			1212	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	82	347	86	550
Volume Left	37	0	86	0
Volume Right	45	66	0	0
cSH	377	1700	1212	1700
Volume to Capacity	0.22	0.20	0.07	0.32
Queue Length 95th (ft)	20	0	6	0
Control Delay (s)	17.2	0.0	8.2	0.0
Lane LOS	C		A	
Approach Delay (s)	17.2	0.0	1.1	
Approach LOS	C			

Intersection Summary				
Average Delay		2.0		
Intersection Capacity Utilization		37.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	152	112	77	173	412	120
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	165	122	84	188	448	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	868	513	578			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	868	513	578			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	44	78	92			
cM capacity (veh/h)	296	561	995			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	287	84	188	578
Volume Left	165	84	0	0
Volume Right	122	0	0	130
cSH	513	995	1700	1700
Volume to Capacity	0.56	0.08	0.11	0.34
Queue Length 95th (ft)	85	7	0	0
Control Delay (s)	23.8	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.8	2.8		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		6.7		
Intersection Capacity Utilization		51.7%	ICU Level of Service	A
Analysis Period (min)		15		

SR 94 Improvement Project — Near Term (2015) Weekday with Project Alt 1-2

13: Jamacha Blvd. & Sweetwater Springs Blvd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	147	13	851	96	62	17	457	688	14	10	645	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1781	1583	1770	1863	1583	3433	3529		1770	1863	1583
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1781	1583	1770	1863	1583	3433	3529		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	160	14	925	104	67	18	497	748	15	11	701	132
RTOR Reduction (vph)	0	0	67	0	0	16	0	1	0	0	0	62
Lane Group Flow (vph)	0	174	858	104	67	2	497	762	0	11	701	70
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		15.9	67.9	13.2	13.2	15.6	52.0	101.3		2.4	51.7	51.7
Effective Green, g (s)		15.9	67.9	13.2	13.2	15.6	52.0	101.3		2.4	51.7	51.7
Actuated g/C Ratio		0.11	0.46	0.09	0.09	0.10	0.35	0.68		0.02	0.35	0.35
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		190	722	157	165	208	1199	2402		28	647	550
v/s Ratio Prot		0.10	c0.41	c0.06	0.04	0.00	0.14	0.22		0.01	c0.38	
v/s Ratio Perm			0.13			0.00						0.04
v/c Ratio		0.92	1.19	0.66	0.41	0.01	0.41	0.32		0.39	1.08	0.13
Uniform Delay, d1		65.8	40.5	65.6	64.1	59.7	36.8	9.7		72.5	48.6	33.1
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		41.9	98.1	10.0	1.6	0.0	0.2	0.3		8.9	60.1	0.5
Delay (s)		107.7	138.5	75.7	65.7	59.7	37.1	10.0		81.3	108.7	33.6
Level of Service		F	F	E	E	E	D	B		F	F	C
Approach Delay (s)		133.7			70.6			20.7			96.6	
Approach LOS		F			E			C			F	

Intersection Summary				
HCM 2000 Control Delay	79.0	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.09			
Actuated Cycle Length (s)	148.8	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	102.0%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project — Near Term (2015) Weekday with Project Alt 1-2

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	984	594	309	843	67	519	63	238	116	129	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	1070	646	336	916	73	564	68	259	126	140	122
RTOR Reduction (vph)	0	0	250	0	0	55	0	0	146	0	0	89
Lane Group Flow (vph)	172	1070	396	336	916	18	564	68	113	126	140	33
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	16.0	27.0	5.0	16.0	16.0	11.0	24.8	24.8	4.0	17.8	17.8
Effective Green, g (s)	5.0	16.0	27.0	5.0	16.0	16.0	11.0	24.8	24.8	4.0	17.8	17.8
Actuated g/C Ratio	0.08	0.24	0.41	0.08	0.24	0.24	0.17	0.38	0.38	0.06	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	260	1236	745	260	1236	384	573	702	596	208	503	428
v/s Ratio Prot	0.05	c0.21	0.09	c0.10	0.18		c0.16	0.04		0.04	c0.08	
v/s Ratio Perm			0.16			0.01			0.07			0.02
v/c Ratio	0.66	0.87	0.53	1.29	0.74	0.05	0.98	0.10	0.19	0.61	0.28	0.08
Uniform Delay, d1	29.6	23.9	14.6	30.4	23.0	19.1	27.3	13.3	13.8	30.1	18.9	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	6.6	0.7	157.2	2.4	0.0	33.3	0.3	0.7	4.9	1.4	0.4
Delay (s)	35.8	30.4	15.4	187.6	25.4	19.1	60.6	13.5	14.5	35.0	20.3	18.2
Level of Service	D	C	B	F	C	B	E	B	B	D	C	B
Approach Delay (s)		25.8			66.2			43.6			24.4	
Approach LOS		C			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	62.8%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

15: Steele Canyon Rd. & Willow Glen Dr.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	326	703	234	266	6	397	20	208	3	42	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.86			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3527		1770	1608			1806	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3527		1770	1608			1806	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	354	764	254	289	7	432	22	226	3	46	13
RTOR Reduction (vph)	0	0	233	0	2	0	0	157	0	0	12	0
Lane Group Flow (vph)	8	354	531	254	294	0	432	91	0	0	50	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.7	21.4	46.6	13.9	34.6		25.2	25.2			6.4	
Effective Green, g (s)	0.7	21.4	46.6	13.9	34.6		25.2	25.2			6.4	
Actuated g/C Ratio	0.01	0.26	0.56	0.17	0.42		0.30	0.30			0.08	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	14	480	966	296	1472		538	488			139	
v/s Ratio Prot	0.00	c0.19	0.17	c0.14	0.08		c0.24	0.06			c0.03	
v/s Ratio Perm			0.17									
v/c Ratio	0.57	0.74	0.55	0.86	0.20		0.80	0.19			0.36	
Uniform Delay, d1	41.0	28.2	11.5	33.5	15.4		26.6	21.3			36.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	46.0	5.8	0.7	21.0	0.1		12.0	0.8			1.6	
Delay (s)	86.9	34.0	12.2	54.6	15.4		38.6	22.1			37.9	
Level of Service	F	C	B	D	B		D	C			D	
Approach Delay (s)		19.6			33.5			32.6			37.9	
Approach LOS		B			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	69.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

16: Steele Canyon Rd. & Jamul Dr.

Timing Plan: PM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	89	372	249	94	691	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	404	271	102	751	410
RTOR Reduction (vph)	0	350	0	78	0	0
Lane Group Flow (vph)	97	54	271	24	751	410
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.8	9.8	17.7	17.7	34.4	56.1
Effective Green, g (s)	9.8	9.8	17.7	17.7	34.4	56.1
Actuated g/C Ratio	0.13	0.13	0.24	0.24	0.47	0.76
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	234	209	446	379	823	1414
v/s Ratio Prot	c0.05		c0.15		c0.42	0.22
v/s Ratio Perm		0.03		0.02		
v/c Ratio	0.41	0.26	0.61	0.06	0.91	0.29
Uniform Delay, d1	29.4	28.8	25.0	21.7	18.4	2.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.7	6.0	0.3	14.3	0.5
Delay (s)	30.6	29.4	31.1	22.0	32.7	3.3
Level of Service	C	C	C	C	C	A
Approach Delay (s)	29.7		28.6			22.3
Approach LOS	C		C			C

Intersection Summary				
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	66.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	183	550	329	70	156	164
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	598	358	76	170	178
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	358				1353	358
vC1, stage 1 conf vol					358	
vC2, stage 2 conf vol					996	
vCu, unblocked vol	358				1353	358
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	83				40	74
cM capacity (veh/h)	1201				282	687

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	199	598	358	76	348
Volume Left	199	0	0	0	170
Volume Right	0	0	0	76	178
cSH	1201	1700	1700	1700	404
Volume to Capacity	0.17	0.35	0.21	0.04	0.86
Queue Length 95th (ft)	15	0	0	0	211
Control Delay (s)	8.6	0.0	0.0	0.0	49.2
Lane LOS	A				E
Approach Delay (s)	2.1		0.0		49.2
Approach LOS					E

Intersection Summary			
Average Delay	11.9		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	342	0	320	172	9	410
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	372	0	348	187	10	446
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			372		1254	372
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			372		1254	372
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			71		93	34
cM capacity (veh/h)			1187		134	674

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	372	348	187	455
Volume Left	0	348	0	10
Volume Right	0	0	0	446
cSH	1700	1187	1700	620
Volume to Capacity	0.22	0.29	0.11	0.73
Queue Length 95th (ft)	0	31	0	158
Control Delay (s)	0.0	9.3	0.0	25.1
Lane LOS		A		D
Approach Delay (s)	0.0	6.0		25.1
Approach LOS				D

Intersection Summary			
Average Delay	10.8		
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	134	43	55	13	7	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	146	47	60	14	8	151

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	192	74	159
Volume Left (vph)	146	0	8
Volume Right (vph)	0	14	151
Hadj (s)	0.19	-0.08	-0.53
Departure Headway (s)	4.5	4.4	4.0
Degree Utilization, x	0.24	0.09	0.18
Capacity (veh/h)	772	775	848
Control Delay (s)	8.9	7.8	7.8
Approach Delay (s)	8.9	7.8	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay		8.3	
Level of Service		A	
Intersection Capacity Utilization		32.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1959	45	17	1264	22	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2129	49	18	1374	24	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			2178		3565	2154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2178		3565	2154
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		0	66
cM capacity (veh/h)			244		6	60

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	2178	1392	45
Volume Left	0	18	24
Volume Right	49	0	21
cSH	1700	244	10
Volume to Capacity	1.28	0.08	4.40
Queue Length 95th (ft)	0	6	Err
Control Delay (s)	0.0	8.5	Err
Lane LOS		A	F
Approach Delay (s)	0.0	8.5	Err
Approach LOS			F

Intersection Summary			
Average Delay		126.5	
Intersection Capacity Utilization		115.8%	ICU Level of Service H
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	119	1934	1657	292	310	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.98		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3460		1765	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3460		1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	2102	1801	317	337	166
RTOR Reduction (vph)	0	0	16	0	2	116
Lane Group Flow (vph)	129	2102	2102	0	352	33
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	7.0	66.0	55.0		16.0	16.0
Effective Green, g (s)	7.0	66.0	55.0		16.0	16.0
Actuated g/C Ratio	0.08	0.73	0.61		0.18	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	137	2595	2114		313	267
v/s Ratio Prot	0.07	c0.59	c0.61		c0.20	
v/s Ratio Perm						0.02
v/c Ratio	0.94	0.81	0.99		1.13	0.12
Uniform Delay, d1	41.3	7.9	17.3		37.0	31.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	59.0	2.0	18.1		89.2	0.2
Delay (s)	100.3	9.9	35.5		126.2	31.3
Level of Service	F	A	D		F	C
Approach Delay (s)		15.1	35.5		98.1	
Approach LOS		B	D		F	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1996	171	512	1796	41	139	13	585	6	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1781	2787	1681	1741	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1781	2787	1681	1741	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	2170	186	557	1952	45	151	14	636	7	4	5
RTOR Reduction (vph)	0	0	97	0	0	18	0	0	324	0	0	0
Lane Group Flow (vph)	76	2170	89	557	1952	27	0	165	312	5	6	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.2	45.2	45.2	18.1	57.1	57.1		12.9	31.0	2.4	2.4	2.4
Effective Green, g (s)	6.2	45.2	45.2	18.1	57.1	57.1		12.9	31.0	2.4	2.4	2.4
Actuated g/C Ratio	0.07	0.48	0.48	0.19	0.60	0.60		0.14	0.33	0.03	0.03	0.03
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	2429	756	656	3069	955		242	1031	42	44	40
v/s Ratio Prot	0.02	c0.43		c0.16	0.38			c0.09	0.06	0.00	c0.00	
v/s Ratio Perm			0.06			0.02			0.05			0.00
v/c Ratio	0.34	0.89	0.12	0.85	0.64	0.03		0.68	0.30	0.12	0.14	0.12
Uniform Delay, d1	42.2	22.5	13.7	36.9	12.1	7.6		38.9	23.7	45.1	45.1	45.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	4.7	0.1	10.0	0.4	0.0		7.7	0.2	1.3	1.4	1.4
Delay (s)	43.1	27.2	13.7	46.9	12.5	7.6		46.6	23.9	46.3	46.5	46.5
Level of Service	D	C	B	D	B	A		D	C	D	D	D
Approach Delay (s)		26.6			19.9			28.6			46.4	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	1612	980	213	1235	31	1145	42	233	36	25	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	1752	1065	232	1342	34	1245	46	253	39	27	68
RTOR Reduction (vph)	0	0	247	0	0	22	0	0	107	0	0	64
Lane Group Flow (vph)	88	1752	818	232	1342	12	1245	46	146	39	27	4
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.7	44.1	89.2	9.0	44.4	44.4	45.1	45.1	54.1	6.9	6.9	6.9
Effective Green, g (s)	8.7	44.1	89.2	9.0	44.4	44.4	45.1	45.1	54.1	6.9	6.9	6.9
Actuated g/C Ratio	0.07	0.36	0.74	0.07	0.37	0.37	0.37	0.37	0.45	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	1851	2052	255	1864	580	1278	693	759	100	106	90
v/s Ratio Prot	0.05	c0.34	0.15	c0.07	0.26		c0.36	0.02	0.01	c0.02	0.01	
v/s Ratio Perm			0.15			0.01			0.08			0.00
v/c Ratio	0.69	0.95	0.40	0.91	0.72	0.02	0.97	0.07	0.19	0.39	0.25	0.04
Uniform Delay, d1	54.9	37.4	5.9	55.6	33.0	24.5	37.4	24.5	20.3	55.1	54.6	54.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	10.8	0.1	33.0	1.4	0.0	19.1	0.0	0.1	2.5	1.3	0.2
Delay (s)	70.0	48.1	6.1	88.6	34.4	24.5	56.5	24.5	20.4	57.6	55.9	54.2
Level of Service	E	D	A	F	C	C	E	C	C	E	E	D
Approach Delay (s)		33.4			42.0			49.7			55.5	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	121.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	955	962	4	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1038	1046	4	2	7
RTOR Reduction (vph)	0	0	0	1	0	6
Lane Group Flow (vph)	5	1038	1046	3	2	1
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	0.6	41.0	36.4	36.4	5.9	6.5
Effective Green, g (s)	0.6	41.0	36.4	36.4	5.9	6.5
Actuated g/C Ratio	0.01	0.75	0.66	0.66	0.11	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	37	1391	1235	1049	190	302
v/s Ratio Prot	0.00	c0.56	c0.56		c0.00	0.00
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.14	0.75	0.85	0.00	0.01	0.00
Uniform Delay, d1	26.9	4.0	7.1	3.1	21.9	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	2.2	5.6	0.0	0.0	0.0
Delay (s)	28.6	6.2	12.7	3.1	21.9	21.3
Level of Service	C	A	B	A	C	C
Approach Delay (s)		6.3	12.6		21.5	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	916	0	3	936	154	2	3	8	185	3	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.91			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3464			1689			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3464			1689			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	996	0	3	1017	167	2	3	9	201	3	76
RTOR Reduction (vph)	0	0	0	0	13	0	0	8	0	0	0	62
Lane Group Flow (vph)	65	996	0	3	1171	0	0	6	0	0	204	14
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	4.1	38.7		0.7	35.3			6.1			13.7	13.7
Effective Green, g (s)	4.1	38.7		0.7	35.3			6.1			13.7	13.7
Actuated g/C Ratio	0.05	0.51		0.01	0.47			0.08			0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	96	1821		16	1626			137			323	288
v/s Ratio Prot	c0.04	c0.28		0.00	c0.34			c0.00			c0.11	
v/s Ratio Perm												0.01
v/c Ratio	0.68	0.55		0.19	0.72			0.04			0.63	0.05
Uniform Delay, d1	34.9	12.3		37.0	16.0			31.9			28.4	25.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	17.3	0.3		5.6	1.6			0.1			4.0	0.1
Delay (s)	52.2	12.7		42.6	17.6			32.0			32.4	25.4
Level of Service	D	B		D	B			C			C	C
Approach Delay (s)		15.1			17.6			32.0			30.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	186	941	8	7	906	24	7	0	7	6	0	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1770	1860		1770	1856			1695			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.87			0.75	1.00
Satd. Flow (perm)	1770	1860		1770	1856			1514			1392	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	202	1023	9	8	985	26	8	0	8	7	0	204
RTOR Reduction (vph)	0	0	0	0	1	0	0	15	0	0	0	186
Lane Group Flow (vph)	202	1032	0	8	1010	0	0	1	0	0	7	18
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	11.0	62.0		0.7	51.7			7.4			7.4	7.4
Effective Green, g (s)	11.0	62.0		0.7	51.7			7.4			7.4	7.4
Actuated g/C Ratio	0.13	0.76		0.01	0.63			0.09			0.09	0.09
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	237	1404		15	1168			136			125	142
v/s Ratio Prot	c0.11	0.55		0.00	c0.54							
v/s Ratio Perm								0.00			0.01	c0.01
v/c Ratio	0.85	0.73		0.53	0.86			0.01			0.06	0.13
Uniform Delay, d1	34.8	5.5		40.5	12.4			34.0			34.2	34.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	24.4	2.0		31.9	6.9			0.0			0.2	0.4
Delay (s)	59.1	7.6		72.4	19.2			34.0			34.3	34.8
Level of Service	E	A		E	B			C			C	C
Approach Delay (s)		16.0			19.7			34.0			34.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	763	219	32	821	65	136	62	66	64	77	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1754			1797	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.74			0.79	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1336			1446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	829	238	35	892	71	148	67	72	70	84	21
RTOR Reduction (vph)	0	0	44	0	0	33	0	16	0	0	6	0
Lane Group Flow (vph)	20	829	194	35	892	38	0	271	0	0	169	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.3	34.3	34.3	1.3	34.3	34.3		16.8			16.8	
Effective Green, g (s)	1.3	34.3	34.3	1.3	34.3	34.3		16.8			16.8	
Actuated g/C Ratio	0.02	0.53	0.53	0.02	0.53	0.53		0.26			0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	35	992	843	35	992	843		348			377	
v/s Ratio Prot	0.01	0.45		c0.02	c0.48							
v/s Ratio Perm			0.12			0.02		c0.20			0.12	
v/c Ratio	0.57	0.84	0.23	1.00	0.90	0.04		0.78			0.45	
Uniform Delay, d1	31.3	12.7	8.0	31.6	13.5	7.2		22.1			19.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	20.6	6.2	0.1	152.1	10.8	0.0		10.8			0.9	
Delay (s)	51.8	18.9	8.2	183.7	24.3	7.2		32.9			20.8	
Level of Service	D	B	A	F	C	A		C			C	
Approach Delay (s)		17.1			28.7			32.9			20.8	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.2%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	15	7	791	914	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	16	8	860	993	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1877	1002	1010			
vC1, stage 1 conf vol	1002					
vC2, stage 2 conf vol	875					
vCu, unblocked vol	1877	1002	1010			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	94	99			
cM capacity (veh/h)	270	294	686			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	29	8	860	1010
Volume Left	13	8	0	0
Volume Right	16	0	0	16
cSH	283	686	1700	1700
Volume to Capacity	0.10	0.01	0.51	0.59
Queue Length 95th (ft)	9	1	0	0
Control Delay (s)	19.2	10.3	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	19.2	0.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	0	20	0	0	9	19	850	0	5	800	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.86		1.00	1.00		1.00	1.00	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1671			1611		1770	1863		1770	1856	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1700			1611		1770	1863		1770	1856	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	0	22	0	0	10	21	924	0	5	870	21
RTOR Reduction (vph)	0	33	0	0	10	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	0	0	21	924	0	5	890	0
Turn Type	Perm	NA			NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		1.0			1.0		0.7	27.7		0.7	27.7	
Effective Green, g (s)		1.0			1.0		0.7	27.7		0.7	27.7	
Actuated g/C Ratio		0.02			0.02		0.02	0.67		0.02	0.67	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		41			38		29	1246		29	1241	
v/s Ratio Prot					0.00		c0.01	c0.50		0.00	0.48	
v/s Ratio Perm		c0.00										
v/c Ratio		0.02			0.01		0.72	0.74		0.17	0.72	
Uniform Delay, d1		19.7			19.7		20.3	4.5		20.1	4.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.1		61.8	2.4		2.8	2.0	
Delay (s)		19.9			19.8		82.0	6.9		22.9	6.4	
Level of Service		B			B		F	A		C	A	
Approach Delay (s)		19.9			19.8			8.6			6.5	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	41.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	59.9%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	620	141	118	221	323	532
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	153	128	240	351	578
RTOR Reduction (vph)	0	105	0	0	0	398
Lane Group Flow (vph)	674	48	128	240	351	180
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	13.2	13.2	4.1	21.3	13.2	13.2
Effective Green, g (s)	13.2	13.2	4.1	21.3	13.2	13.2
Actuated g/C Ratio	0.31	0.31	0.10	0.50	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1066	491	170	933	578	491
v/s Ratio Prot			c0.07	0.13	c0.19	
v/s Ratio Perm	c0.20	0.03				0.11
v/c Ratio	0.63	0.10	0.75	0.26	0.61	0.37
Uniform Delay, d1	12.6	10.4	18.7	6.1	12.4	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	17.1	0.1	1.8	0.5
Delay (s)	13.8	10.5	35.8	6.2	14.3	11.9
Level of Service	B	B	D	A	B	B
Approach Delay (s)	13.2			16.5	12.8	
Approach LOS	B			B	B	

Intersection Summary				
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	42.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	51.2%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	44	303	44	48	404
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	48	329	48	52	439
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	897	353			377	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	897	353			377	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	93			96	
cM capacity (veh/h)	297	690			1181	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	97	377	52	439
Volume Left	49	0	52	0
Volume Right	48	48	0	0
cSH	413	1700	1181	1700
Volume to Capacity	0.23	0.22	0.04	0.26
Queue Length 95th (ft)	22	0	3	0
Control Delay (s)	16.4	0.0	8.2	0.0
Lane LOS	C		A	
Approach Delay (s)	16.4	0.0	0.9	
Approach LOS	C			

Intersection Summary				
Average Delay		2.1		
Intersection Capacity Utilization		37.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	141	78	63	189	278	163
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	153	85	68	205	302	177
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	733	391	479			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	733	391	479			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	87	94			
cM capacity (veh/h)	363	658	1083			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	238	68	205	479
Volume Left	153	68	0	0
Volume Right	85	0	0	177
cSH	564	1083	1700	1700
Volume to Capacity	0.42	0.06	0.12	0.28
Queue Length 95th (ft)	52	5	0	0
Control Delay (s)	18.2	8.5	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.2	2.1		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		4.9		
Intersection Capacity Utilization		45.9%	ICU Level of Service	A
Analysis Period (min)		15		

SR 94 Improvement Project — Near Term (2015) with Project Alt 1-2 Saturday

13: Jamacha Blvd. & Sweetwater Springs Blvd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	3	519	10	6	2	372	526	4	2	698	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1776	1583	1770	1863	1583	3433	3536		1770	1863	1583
Flt Permitted		0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1776	1583	1770	1863	1583	3433	3536		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	3	564	11	7	2	404	572	4	2	759	135
RTOR Reduction (vph)	0	0	281	0	0	2	0	0	0	0	0	68
Lane Group Flow (vph)	0	133	283	11	7	0	404	576	0	2	759	67
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		8.7	19.0	2.3	2.3	3.0	10.3	46.0		0.7	36.4	36.4
Effective Green, g (s)		8.7	19.0	2.3	2.3	3.0	10.3	46.0		0.7	36.4	36.4
Actuated g/C Ratio		0.12	0.26	0.03	0.03	0.04	0.14	0.62		0.01	0.49	0.49
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		209	408	55	58	150	479	2207		16	920	781
v/s Ratio Prot		0.07	c0.10	c0.01	0.00	0.00	c0.12	0.16		0.00	c0.41	
v/s Ratio Perm			0.08			0.00						0.04
v/c Ratio		0.64	0.69	0.20	0.12	0.00	0.84	0.26		0.12	0.82	0.09
Uniform Delay, d1		31.0	24.7	34.8	34.7	33.9	30.9	6.2		36.2	15.9	9.9
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		6.2	5.1	1.8	0.9	0.0	12.8	0.3		3.5	8.3	0.2
Delay (s)		37.2	29.8	36.6	35.7	33.9	43.7	6.5		39.7	24.3	10.1
Level of Service		D	C	D	D	C	D	A		D	C	B
Approach Delay (s)		31.2			36.0			21.8			22.2	
Approach LOS		C			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	82.2%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project — Near Term (2015) with Project Alt 1-2 Saturday

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	715	502	177	695	67	571	75	147	123	120	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	777	546	192	755	73	621	82	160	134	130	137
RTOR Reduction (vph)	0	0	291	0	0	55	0	0	104	0	0	98
Lane Group Flow (vph)	180	777	255	192	755	18	621	82	56	134	130	39
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	14.7	22.7	4.0	14.7	14.7	8.0	20.9	20.9	3.9	16.8	16.8
Effective Green, g (s)	4.0	14.7	22.7	4.0	14.7	14.7	8.0	20.9	20.9	3.9	16.8	16.8
Actuated g/C Ratio	0.07	0.25	0.38	0.07	0.25	0.25	0.13	0.35	0.35	0.07	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	1256	710	230	1256	391	461	654	556	225	526	446
v/s Ratio Prot	0.05	c0.15	0.05	c0.06	0.15		c0.18	0.04		0.04	c0.07	
v/s Ratio Perm			0.11			0.01			0.04			0.02
v/c Ratio	0.78	0.62	0.36	0.83	0.60	0.05	1.35	0.13	0.10	0.60	0.25	0.09
Uniform Delay, d1	27.3	19.9	13.2	27.4	19.8	17.1	25.8	13.1	13.0	27.0	16.5	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.8	0.9	0.3	22.2	0.8	0.0	170.1	0.4	0.4	4.2	1.1	0.4
Delay (s)	43.1	20.8	13.5	49.6	20.6	17.1	195.8	13.5	13.3	31.2	17.6	16.1
Level of Service	D	C	B	D	C	B	F	B	B	C	B	B
Approach Delay (s)		20.8			25.8			144.7			21.6	
Approach LOS		C			C			F			C	

Intersection Summary				
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	52.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	348	428	116	340	6	321	6	142	4	8	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.86			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	3529		1770	1595			1728	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1583	1770	3529		1770	1595			1728	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	378	465	126	370	7	349	7	154	4	9	12
RTOR Reduction (vph)	0	0	178	0	1	0	0	106	0	0	12	0
Lane Group Flow (vph)	8	378	287	126	376	0	349	55	0	0	13	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.7	19.4	39.6	6.1	24.8		20.2	20.2			2.5	
Effective Green, g (s)	0.7	19.4	39.6	6.1	24.8		20.2	20.2			2.5	
Actuated g/C Ratio	0.01	0.30	0.62	0.10	0.39		0.31	0.31			0.04	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	19	562	1075	168	1363		556	501			67	
v/s Ratio Prot	0.00	c0.20	0.08	c0.07	0.11		c0.20	0.03			c0.01	
v/s Ratio Perm			0.10									
v/c Ratio	0.42	0.67	0.27	0.75	0.28		0.63	0.11			0.20	
Uniform Delay, d1	31.5	19.6	5.6	28.3	13.5		18.8	15.6			29.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	14.4	3.2	0.1	17.0	0.1		5.3	0.4			1.5	
Delay (s)	45.9	22.8	5.8	45.3	13.6		24.1	16.1			31.4	
Level of Service	D	C	A	D	B		C	B			C	
Approach Delay (s)		13.7			21.6			21.6			31.4	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	59.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	79	254	205	69	305	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	276	223	75	332	315
RTOR Reduction (vph)	0	233	0	49	0	0
Lane Group Flow (vph)	86	43	223	26	332	315
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	8.2	8.2	18.4	18.4	13.7	36.1
Effective Green, g (s)	8.2	8.2	18.4	18.4	13.7	36.1
Actuated g/C Ratio	0.16	0.16	0.35	0.35	0.26	0.69
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	277	248	655	556	463	1285
v/s Ratio Prot	c0.05		c0.12		c0.19	0.17
v/s Ratio Perm		0.03		0.02		
v/c Ratio	0.31	0.17	0.34	0.05	0.72	0.25
Uniform Delay, d1	19.5	19.1	12.5	11.2	17.5	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.3	1.4	0.2	5.2	0.5
Delay (s)	20.2	19.5	13.9	11.3	22.8	3.5
Level of Service	C	B	B	B	C	A
Approach Delay (s)	19.6		13.2			13.4
Approach LOS	B		B			B

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

17: Lyons Valley Rd. & Jamul Dr.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	53	220	201	64	88	92
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	239	218	70	96	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	218				573	218
vC1, stage 1 conf vol					218	
vC2, stage 2 conf vol					354	
vCu, unblocked vol	218				573	218
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	96				85	88
cM capacity (veh/h)	1351				623	821

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	58	239	218	70	196
Volume Left	58	0	0	0	96
Volume Right	0	0	0	70	100
cSH	1351	1700	1700	1700	711
Volume to Capacity	0.04	0.14	0.13	0.04	0.28
Queue Length 95th (ft)	3	0	0	0	28
Control Delay (s)	7.8	0.0	0.0	0.0	12.0
Lane LOS	A				B
Approach Delay (s)	1.5		0.0		12.0
Approach LOS					B

Intersection Summary				
Average Delay		3.6		
Intersection Capacity Utilization		34.4%	ICU Level of Service	A
Analysis Period (min)		15		

18: Jefferson Rd. & Lyons Valley Rd.

Timing Plan: PM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	168	0	124	178	10	134
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	183	0	135	193	11	146
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			183		646	183
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			183		646	183
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		97	83
cM capacity (veh/h)			1392		394	860

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	183	135	193	157
Volume Left	0	135	0	11
Volume Right	0	0	0	146
cSH	1700	1392	1700	795
Volume to Capacity	0.11	0.10	0.11	0.20
Queue Length 95th (ft)	0	8	0	18
Control Delay (s)	0.0	7.9	0.0	10.6
Lane LOS		A		B
Approach Delay (s)	0.0	3.2		10.6
Approach LOS				B

Intersection Summary				
Average Delay		4.1		
Intersection Capacity Utilization		34.6%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	193	23	25	19	11	187
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	210	25	27	21	12	203

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	235	48	215
Volume Left (vph)	210	0	12
Volume Right (vph)	0	21	203
Hadj (s)	0.21	-0.23	-0.52
Departure Headway (s)	4.6	4.4	4.1
Degree Utilization, x	0.30	0.06	0.24
Capacity (veh/h)	737	755	836
Control Delay (s)	9.6	7.7	8.3
Approach Delay (s)	9.6	7.7	8.3
Approach LOS	A	A	A

Intersection Summary			
Delay		8.9	
Level of Service		A	
Intersection Capacity Utilization		37.4%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1147	42	5	1036	5	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1247	46	5	1126	5	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1292		2407	1270
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1292		2407	1270
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		85	91
cM capacity (veh/h)			536		36	205

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1292	1132	24
Volume Left	0	5	5
Volume Right	46	0	18
cSH	1700	536	99
Volume to Capacity	0.76	0.01	0.24
Queue Length 95th (ft)	0	1	22
Control Delay (s)	0.0	0.4	52.4
Lane LOS		A	F
Approach Delay (s)	0.0	0.4	52.4
Approach LOS			F

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		72.9%	ICU Level of Service C
Analysis Period (min)		15	

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	0	91	3	0	46	44	444	8	53	156	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		0.95	0.91	0.95
Frt	1.00	0.85			0.87		1.00	1.00		1.00	0.98	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1583			1621		3433	1858		1681	1665	1504
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	0.99	1.00
Satd. Flow (perm)	3433	1583			1621		3433	1858		1681	1650	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	0	99	3	0	50	48	483	9	58	170	192
RTOR Reduction (vph)	0	77	0	0	50	0	0	1	0	0	4	106
Lane Group Flow (vph)	402	22	0	0	3	0	48	491	0	52	193	65
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	11.2	11.2			2.8		1.3	18.5		2.0	21.2	19.2
Effective Green, g (s)	11.2	11.2			2.8		1.3	18.5		2.0	21.2	19.2
Actuated g/C Ratio	0.22	0.22			0.06		0.03	0.37		0.04	0.42	0.38
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	761	351			89		88	680		66	693	571
v/s Ratio Prot	c0.12	0.01			c0.00		0.01	c0.26		c0.03	0.01	
v/s Ratio Perm											0.11	0.04
v/c Ratio	0.53	0.06			0.03		0.55	0.72		0.79	0.28	0.11
Uniform Delay, d1	17.3	15.5			22.6		24.3	13.8		24.0	9.6	10.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1			0.2		6.7	3.8		44.9	0.2	0.1
Delay (s)	18.0	15.6			22.7		31.1	17.6		69.0	9.8	10.2
Level of Service	B	B			C		C	B		E	A	B
Approach Delay (s)		17.5			22.7			18.8			17.3	
Approach LOS		B			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	53.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	496	250	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	539	272	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	811	272	272			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	811	272	272			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	349	767	1292			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	539	272
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1292	1700
Volume to Capacity	0.00	0.00	0.16
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	572	0	131	4	0	9	147	214	0	5	520	624
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85			0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1583			1659		3433	1863		1770	1863	1583
Flt Permitted	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1583			1659		3433	1863		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	622	0	142	4	0	10	160	233	0	5	565	678
RTOR Reduction (vph)	0	105	0	0	14	0	0	0	0	0	0	435
Lane Group Flow (vph)	622	37	0	0	0	0	160	233	0	5	565	243
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	14.1	14.1			0.9		4.0	22.9		0.7	19.6	19.6
Effective Green, g (s)	14.1	14.1			0.9		4.0	22.9		0.7	19.6	19.6
Actuated g/C Ratio	0.26	0.26			0.02		0.07	0.42		0.01	0.36	0.36
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	886	408			27		251	781		22	668	568
v/s Ratio Prot	c0.18	0.02			c0.00		c0.05	c0.13		0.00	c0.30	
v/s Ratio Perm												0.15
v/c Ratio	0.70	0.09			0.01		0.64	0.30		0.23	0.85	0.43
Uniform Delay, d1	18.3	15.4			26.4		24.6	10.5		26.7	16.1	13.3
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1			0.1		5.2	0.2		5.2	9.7	0.5
Delay (s)	20.9	15.5			26.5		29.8	10.7		31.9	25.8	13.8
Level of Service	C	B			C		C	B		C	C	B
Approach Delay (s)		19.9			26.5			18.5			19.3	
Approach LOS		B			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	64.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	361	655	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	392	712	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1104	712	712			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1104	712	712			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	233	432	888			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	392	712
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	888	1700
Volume to Capacity	0.00	0.00	0.42
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	463	4	109	3	0	49	100	209	4	57	449	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		0.95	0.91	0.95
Frt	1.00	0.85			0.87		1.00	1.00		1.00	0.99	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1592			1620		3433	1858		1681	1673	1504
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1592			1620		3433	1858		1681	1670	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	503	4	118	3	0	53	109	227	4	62	488	449
RTOR Reduction (vph)	0	89	0	0	53	0	0	1	0	0	3	267
Lane Group Flow (vph)	503	33	0	0	3	0	109	230	0	56	536	137
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	12.7	12.7			2.8		3.0	18.7		2.1	19.9	17.8
Effective Green, g (s)	12.7	12.7			2.8		3.0	18.7		2.1	19.9	17.8
Actuated g/C Ratio	0.24	0.24			0.05		0.06	0.36		0.04	0.38	0.34
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	833	386			86		196	664		67	635	511
v/s Ratio Prot	c0.15	0.02			c0.00		0.03	0.12		0.03	c0.03	
v/s Ratio Perm											c0.29	0.09
v/c Ratio	0.60	0.08			0.03		0.56	0.35		0.84	0.84	0.27
Uniform Delay, d1	17.6	15.3			23.5		24.0	12.3		24.9	14.8	12.5
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1			0.2		3.4	0.3		56.4	10.0	0.3
Delay (s)	18.8	15.4			23.6		27.4	12.6		81.4	24.8	12.8
Level of Service	B	B			C		C	B		F	C	B
Approach Delay (s)		18.1			23.6			17.4			23.1	
Approach LOS		B			C			B			C	

Intersection Summary				
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	65.6%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	313	561	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	340	610	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	950	610	610			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	950	610	610			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	289	495	969			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	340	610
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	969	1700
Volume to Capacity	0.00	0.00	0.36
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	568	0	132	0	0	9	141	245	0	5	284	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85			0.86		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1583			1611		3433	1863		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1583			1611		3433	1863		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	617	0	143	0	0	10	153	266	0	5	309	682
RTOR Reduction (vph)	0	105	0	0	10	0	0	0	0	0	0	459
Lane Group Flow (vph)	617	38	0	0	0	0	153	266	0	5	309	223
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	13.9	13.9			0.9		4.1	20.5		0.6	17.0	17.0
Effective Green, g (s)	13.9	13.9			0.9		4.1	20.5		0.6	17.0	17.0
Actuated g/C Ratio	0.27	0.27			0.02		0.08	0.39		0.01	0.33	0.33
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	919	423			27		271	735		20	610	518
v/s Ratio Prot	c0.18	0.02			c0.00		c0.04	c0.14		0.00	c0.17	
v/s Ratio Perm												0.14
v/c Ratio	0.67	0.09			0.01		0.56	0.36		0.25	0.51	0.43
Uniform Delay, d1	17.0	14.3			25.1		23.0	11.1		25.4	14.1	13.7
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.1			0.1		2.7	0.3		6.5	0.7	0.6
Delay (s)	18.9	14.4			25.2		25.7	11.4		31.9	14.7	14.2
Level of Service	B	B			C		C	B		C	B	B
Approach Delay (s)		18.0			25.2			16.6			14.5	
Approach LOS		B			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	56.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	386	416	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	420	452	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	872	452	452			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	872	452	452			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	321	607	1108			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	420	452
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1108	1700
Volume to Capacity	0.00	0.00	0.27
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	25.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	77	1371	2313	611	565	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.97		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3428		1760	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3428		1760	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1490	2514	664	614	500
RTOR Reduction (vph)	0	0	17	0	2	47
Lane Group Flow (vph)	84	1490	3161	0	662	403
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	5.0	97.0	88.0		35.0	35.0
Effective Green, g (s)	5.0	97.0	88.0		35.0	35.0
Actuated g/C Ratio	0.04	0.69	0.63		0.25	0.25
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	63	2452	2154		440	376
v/s Ratio Prot	c0.05	0.42	c0.92		c0.38	
v/s Ratio Perm						0.27
v/c Ratio	1.33	0.61	1.47		1.50	1.07
Uniform Delay, d1	67.5	11.4	26.0		52.5	52.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	225.9	0.4	212.9		238.4	66.6
Delay (s)	293.4	11.8	238.9		290.9	119.1
Level of Service	F	B	F		F	F
Approach Delay (s)		26.9	238.9		221.5	
Approach LOS		C	F		F	

Intersection Summary			
HCM 2000 Control Delay	178.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1431	207	565	2214	14	543	11	587	4	6	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1689	1583	1681	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1689	1583	1681	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	1555	225	614	2407	15	590	12	638	4	7	0
RTOR Reduction (vph)	0	0	133	0	0	6	0	0	151	0	0	0
Lane Group Flow (vph)	14	1555	92	614	2407	9	301	301	487	4	7	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	2.3	45.7	45.7	24.8	68.2	68.2	23.3	23.3	48.1	2.4	2.4	
Effective Green, g (s)	2.3	45.7	45.7	24.8	68.2	68.2	23.3	23.3	48.1	2.4	2.4	
Actuated g/C Ratio	0.02	0.41	0.41	0.22	0.61	0.61	0.21	0.21	0.43	0.02	0.02	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	70	2071	644	758	3090	962	349	350	735	35	37	
v/s Ratio Prot	0.00	0.31		c0.18	c0.47		c0.18	0.18	c0.15	0.00	c0.00	
v/s Ratio Perm			0.06			0.01			0.16			
v/c Ratio	0.20	0.75	0.14	0.81	0.78	0.01	0.86	0.86	0.66	0.11	0.19	
Uniform Delay, d1	54.0	28.4	20.9	41.5	16.4	8.7	42.9	42.9	25.6	53.9	53.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	1.6	0.1	6.5	1.3	0.0	19.2	18.5	2.3	1.5	2.5	
Delay (s)	55.5	30.0	21.0	48.0	17.7	8.7	62.1	61.4	27.8	55.3	56.4	
Level of Service	E	C	C	D	B	A	E	E	C	E	E	
Approach Delay (s)		29.0			23.8			44.3			56.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

3: SR 94 & Jamacha Rd. & Dwy

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1392	923	439	1937	50	1320	75	673	27	22	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1513	1003	477	2105	54	1435	82	732	29	24	41
RTOR Reduction (vph)	0	0	126	0	0	31	0	0	98	0	0	39
Lane Group Flow (vph)	82	1513	877	477	2105	23	1435	82	634	29	24	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.0	45.1	99.2	19.0	59.1	59.1	54.1	54.1	73.1	6.6	6.6	6.6
Effective Green, g (s)	5.0	45.1	99.2	19.0	59.1	59.1	54.1	54.1	73.1	6.6	6.6	6.6
Actuated g/C Ratio	0.04	0.32	0.70	0.13	0.42	0.42	0.38	0.38	0.52	0.05	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	62	1628	1115	463	2134	664	1319	715	866	82	87	74
v/s Ratio Prot	0.05	0.30	0.30	c0.14	c0.41		c0.42	0.04	0.10	c0.02	0.01	
v/s Ratio Perm			0.25			0.01			0.30			0.00
v/c Ratio	1.32	0.93	0.79	1.03	0.99	0.03	1.09	0.11	0.73	0.35	0.28	0.03
Uniform Delay, d1	67.9	46.3	13.8	60.9	40.5	24.0	43.4	27.9	26.3	65.0	64.8	64.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	222.7	9.7	3.7	49.8	16.2	0.0	52.3	0.1	3.2	2.6	1.7	0.1
Delay (s)	290.6	56.0	17.5	110.7	56.7	24.1	95.7	28.0	29.5	67.7	66.5	64.2
Level of Service	F	E	B	F	E	C	F	C	C	E	E	E
Approach Delay (s)		48.6			65.8			71.7			65.8	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	61.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

4: SR 94 & Cougar Canyon Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	390	750	1125	299	122	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	815	1223	325	133	478
RTOR Reduction (vph)	0	0	0	112	0	66
Lane Group Flow (vph)	424	815	1223	213	133	412
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	15.0	96.1	77.1	77.1	13.3	28.3
Effective Green, g (s)	15.0	96.1	77.1	77.1	13.3	28.3
Actuated g/C Ratio	0.13	0.82	0.66	0.66	0.11	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	438	1524	1223	1039	200	435
v/s Ratio Prot	0.12	0.44	c0.66		0.08	c0.12
v/s Ratio Perm				0.13		0.14
v/c Ratio	0.97	0.53	1.00	0.21	0.67	0.95
Uniform Delay, d1	51.0	3.4	20.2	8.0	49.9	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.4	0.4	25.7	0.1	8.1	29.8
Delay (s)	85.3	3.8	45.9	8.1	58.0	73.6
Level of Service	F	A	D	A	E	E
Approach Delay (s)		31.7	38.0		70.2	
Approach LOS		C	D		E	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	762	0	4	1155	234	5	2	2	177	0	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1758			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1758			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	828	0	4	1255	254	5	2	2	192	0	329
RTOR Reduction (vph)	0	0	0	0	0	33	0	2	0	0	0	236
Lane Group Flow (vph)	149	828	0	4	1255	221	0	7	0	0	192	93
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	11.0	104.4		0.8	94.2	94.2		6.2			16.0	16.0
Effective Green, g (s)	11.0	104.4		0.8	94.2	94.2		6.2			16.0	16.0
Actuated g/C Ratio	0.08	0.73		0.01	0.66	0.66		0.04			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	135	1356		9	1223	1039		76			197	176
v/s Ratio Prot	c0.08	0.44		0.00	c0.67			c0.00			c0.11	
v/s Ratio Perm						0.14						0.06
v/c Ratio	1.10	0.61		0.44	1.03	0.21		0.09			0.97	0.53
Uniform Delay, d1	66.2	9.5		71.1	24.6	9.8		65.9			63.5	60.1
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	108.0	0.8		31.3	32.6	0.1		0.5			56.3	2.8
Delay (s)	174.2	10.4		102.4	57.2	9.9		66.4			119.8	63.0
Level of Service	F	B		F	E	A		E			F	E
Approach Delay (s)		35.4			49.4			66.4			83.9	
Approach LOS		D			D			E			F	

Intersection Summary				
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	143.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	94.1%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	185	724	7	13	1020	21	12	2	12	32	7	399
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	201	787	8	14	1109	23	13	2	13	35	8	434
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1132			795			2767	2353	791	2352	2345	1120
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1132			795			2767	2353	791	2352	2345	1120
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	67			98			0	91	97	0	68	0
cM capacity (veh/h)	617			827			0	24	390	17	24	251

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	201	795	14	1132	28	42	434
Volume Left	201	0	14	0	13	35	0
Volume Right	0	8	0	23	13	0	434
cSH	617	1700	827	1700	0	18	251
Volume to Capacity	0.33	0.47	0.02	0.67	Err	2.41	1.73
Queue Length 95th (ft)	35	0	1	0	Err	146	713
Control Delay (s)	13.6	0.0	9.4	0.0	Err	1092.9	377.4
Lane LOS	B		A		F	F	F
Approach Delay (s)	2.8		0.1		Err	441.1	
Approach LOS					F	F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	544	226	48	664	80	782	365	87	97	365	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1788			1779	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.43			0.73	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		794			1303	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	591	246	52	722	87	850	397	95	105	397	196
RTOR Reduction (vph)	0	0	29	0	0	32	0	2	0	0	10	0
Lane Group Flow (vph)	130	591	217	52	722	55	0	1340	0	0	688	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	7.0	38.2	38.2	5.6	36.8	36.8		95.0			95.0	
Effective Green, g (s)	7.0	38.2	38.2	5.6	36.8	36.8		95.0			95.0	
Actuated g/C Ratio	0.05	0.25	0.25	0.04	0.24	0.24		0.63			0.63	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	82	471	400	65	454	386		500			820	
v/s Ratio Prot	c0.07	0.32		0.03	c0.39							
v/s Ratio Perm			0.14			0.03		c1.69			0.53	
v/c Ratio	1.59	1.25	0.54	0.80	1.59	0.14		2.68			0.84	
Uniform Delay, d1	71.9	56.3	48.7	72.0	57.0	44.6		27.9			21.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	313.4	131.1	1.5	48.8	275.9	0.2		761.8			7.6	
Delay (s)	385.3	187.4	50.2	120.9	332.9	44.8		789.7			29.5	
Level of Service	F	F	D	F	F	D		F			C	
Approach Delay (s)		179.1			291.0			789.7			29.5	
Approach LOS		F			F			F			C	

Intersection Summary				
HCM 2000 Control Delay	388.9	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	2.33			
Actuated Cycle Length (s)	150.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	158.3%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	6	6	846	565	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	7	7	920	614	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1556	623	633			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1556	623	633			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	99			
cM capacity (veh/h)	123	486	950			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	15	7	920	633
Volume Left	9	7	0	0
Volume Right	7	0	0	18
cSH	181	950	1700	1700
Volume to Capacity	0.08	0.01	0.54	0.37
Queue Length 95th (ft)	7	1	0	0
Control Delay (s)	26.7	8.8	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	26.7	0.1		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	0	78	6	0	47	40	579	26	55	439	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	0	85	7	0	51	43	629	28	60	477	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1397	1360	496	1430	1364	643	514			658		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1397	1360	496	1430	1364	643	514			658		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	60	100	85	93	100	89	96			94		
cM capacity (veh/h)	97	133	574	88	132	473	1051			930		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	124	58	701	574
Volume Left	39	7	43	60
Volume Right	85	51	28	37
cSH	225	317	1051	930
Volume to Capacity	0.55	0.18	0.04	0.06
Queue Length 95th (ft)	74	16	3	5
Control Delay (s)	38.9	18.9	1.1	1.7
Lane LOS	E	C	A	A
Approach Delay (s)	38.9	18.9	1.1	1.7
Approach LOS	E	C		

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	62.6%	ICU Level of Service	B	
Analysis Period (min)	15			

10: SR 94 & Reservation Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	141	38	88	443	316	332
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	153	41	96	482	343	361
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1197	524	704			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1197	524	704			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	16	93	89			
cM capacity (veh/h)	183	553	893			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	195	577	704
Volume Left	153	96	0
Volume Right	41	0	361
cSH	214	893	1700
Volume to Capacity	0.91	0.11	0.41
Queue Length 95th (ft)	186	9	0
Control Delay (s)	87.1	2.8	0.0
Lane LOS	F	A	
Approach Delay (s)	87.1	2.8	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	12.6		
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	196	74	731	72	19	211
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	213	80	795	78	21	229
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.65	0.65			0.65	
vC, conflicting volume	1104	834			873	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	888	470			530	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	79			97	
cM capacity (veh/h)	197	384			671	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	293	873	21	229
Volume Left	213	0	21	0
Volume Right	80	78	0	0
cSH	227	1700	671	1700
Volume to Capacity	1.29	0.51	0.03	0.13
Queue Length 95th (ft)	386	0	2	0
Control Delay (s)	202.7	0.0	10.5	0.0
Lane LOS	F		B	
Approach Delay (s)	202.7	0.0	0.9	
Approach LOS	F			

Intersection Summary			
Average Delay	42.2		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	65	167	20	176	70	239	730	7	19	354	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1783		1770	1860		1770	1863	1583
Flt Permitted	0.44	1.00	1.00	0.71	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	817	1863	1583	1324	1783		1770	1860		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	71	182	22	191	76	260	793	8	21	385	210
RTOR Reduction (vph)	0	0	140	0	25	0	0	0	0	0	0	137
Lane Group Flow (vph)	142	71	42	22	242	0	260	801	0	21	385	73
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	12.7	12.7	12.7	12.7	12.7		11.1	29.4		0.7	19.0	19.0
Effective Green, g (s)	12.7	12.7	12.7	12.7	12.7		11.1	29.4		0.7	19.0	19.0
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23		0.20	0.54		0.01	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	189	431	366	306	413		358	997		22	645	548
v/s Ratio Prot		0.04			0.14		c0.15	c0.43		0.01	0.21	
v/s Ratio Perm	c0.17		0.03	0.02								0.05
v/c Ratio	0.75	0.16	0.12	0.07	0.59		0.73	0.80		0.95	0.60	0.13
Uniform Delay, d1	19.6	16.8	16.6	16.4	18.7		20.4	10.3		27.0	14.7	12.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.4	0.2	0.1	0.1	2.1		7.2	4.7		169.9	1.5	0.1
Delay (s)	35.0	17.0	16.8	16.5	20.8		27.6	15.1		196.9	16.2	12.4
Level of Service	D	B	B	B	C		C	B		F	B	B
Approach Delay (s)		23.4			20.5			18.2			21.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	334	2251	1766	804	911	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3373		1768	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3373		1768	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	363	2447	1920	874	990	330
RTOR Reduction (vph)	0	0	37	0	1	85
Lane Group Flow (vph)	363	2447	2757	0	1022	212
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	17.0	84.0	63.0		48.0	48.0
Effective Green, g (s)	17.0	84.0	63.0		48.0	48.0
Actuated g/C Ratio	0.12	0.60	0.45		0.34	0.34
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	214	2123	1517		606	515
v/s Ratio Prot	c0.21	0.69	c0.82		c0.58	
v/s Ratio Perm						0.14
v/c Ratio	1.70	1.15	1.82		1.69	0.41
Uniform Delay, d1	61.5	28.0	38.5		46.0	35.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	332.6	74.6	370.3		316.3	0.5
Delay (s)	394.1	102.6	408.8		362.3	35.7
Level of Service	F	F	F		F	D
Approach Delay (s)		140.2	408.8		288.8	
Approach LOS		F	F		F	

Intersection Summary			
HCM 2000 Control Delay	276.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	159.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	2690	418	660	2085	6	385	6	872	9	5	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1737	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1688	1583	1681	1737	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2924	454	717	2266	7	418	7	948	10	5	3
RTOR Reduction (vph)	0	0	217	0	0	2	0	0	119	0	0	0
Lane Group Flow (vph)	11	2924	237	717	2266	5	213	212	829	7	8	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	2.5	66.6	66.6	38.1	102.2	102.2	16.0	16.0	54.1	2.7	2.7	2.7
Effective Green, g (s)	2.5	66.6	66.6	38.1	102.2	102.2	16.0	16.0	54.1	2.7	2.7	2.7
Actuated g/C Ratio	0.02	0.48	0.48	0.27	0.73	0.73	0.11	0.11	0.39	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	61	2429	756	938	3728	1160	192	193	659	32	33	30
v/s Ratio Prot	0.00	c0.57		0.21	0.45		0.13	0.13	c0.34	0.00	c0.00	
v/s Ratio Perm			0.15			0.00			0.18			0.00
v/c Ratio	0.18	1.20	0.31	0.76	0.61	0.00	1.11	1.10	1.26	0.22	0.24	0.10
Uniform Delay, d1	67.4	36.4	22.4	46.5	9.0	5.0	61.7	61.7	42.7	67.3	67.3	67.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	95.9	0.2	3.8	0.3	0.0	97.3	93.6	128.3	3.4	3.8	1.5
Delay (s)	68.9	132.3	22.6	50.3	9.2	5.0	159.0	155.3	171.0	70.7	71.1	68.6
Level of Service	E	F	C	D	A	A	F	F	F	E	E	E
Approach Delay (s)		117.4			19.1			166.7			70.6	
Approach LOS		F			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	88.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	139.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	119.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	2698	1192	642	1854	123	1074	57	636	121	62	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	2933	1296	698	2015	134	1167	62	691	132	67	90
RTOR Reduction (vph)	0	0	81	0	0	32	0	0	27	0	0	81
Lane Group Flow (vph)	129	2933	1215	698	2015	102	1167	62	664	132	67	9
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.2	69.1	96.1	22.0	75.9	75.9	27.0	27.0	49.0	14.5	14.5	14.5
Effective Green, g (s)	15.2	69.1	96.1	22.0	75.9	75.9	27.0	27.0	49.0	14.5	14.5	14.5
Actuated g/C Ratio	0.10	0.47	0.65	0.15	0.51	0.51	0.18	0.18	0.33	0.10	0.10	0.10
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	181	2364	1023	508	2597	808	623	338	564	172	181	154
v/s Ratio Prot	0.07	c0.58	0.22	c0.20	0.40		c0.34	0.03	0.17	c0.07	0.04	
v/s Ratio Perm			0.55			0.06			0.25			0.01
v/c Ratio	0.71	1.24	1.19	1.37	0.78	0.13	1.87	0.18	1.18	0.77	0.37	0.06
Uniform Delay, d1	64.6	39.8	26.2	63.3	29.5	19.0	60.8	51.5	49.8	65.4	62.8	60.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.5	112.1	94.5	180.4	1.5	0.1	399.0	0.3	96.8	18.3	1.3	0.2
Delay (s)	77.1	151.9	120.7	243.7	31.0	19.1	459.8	51.7	146.6	83.7	64.1	61.0
Level of Service	E	F	F	F	C	B	F	D	F	F	E	E
Approach Delay (s)		140.4			82.6			333.9			72.1	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	160.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	148.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	117.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	115	1429	940	48	70	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	1553	1022	52	76	165
RTOR Reduction (vph)	0	0	0	13	0	139
Lane Group Flow (vph)	125	1553	1022	39	76	26
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	8.6	106.1	93.5	93.5	10.7	19.3
Effective Green, g (s)	8.6	106.1	93.5	93.5	10.7	19.3
Actuated g/C Ratio	0.07	0.85	0.75	0.75	0.09	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	1583	1395	1185	151	295
v/s Ratio Prot	0.04	c0.83	0.55		c0.04	0.01
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.53	0.98	0.73	0.03	0.50	0.09
Uniform Delay, d1	56.1	8.4	8.7	4.0	54.5	45.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	18.2	2.0	0.0	2.6	0.1
Delay (s)	58.3	26.6	10.7	4.0	57.1	45.3
Level of Service	E	C	B	A	E	D
Approach Delay (s)		29.0	10.4		49.0	
Approach LOS		C	B		D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	124.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	1303	1	9	816	200	2	5	28	360	7	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1654			1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1654			1776	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	1416	1	10	887	217	2	5	30	391	8	134
RTOR Reduction (vph)	0	0	0	0	0	42	0	29	0	0	0	77
Lane Group Flow (vph)	141	1417	0	10	887	175	0	8	0	0	399	57
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	12.0	88.7		0.8	77.5	77.5		6.7			27.0	27.0
Effective Green, g (s)	12.0	88.7		0.8	77.5	77.5		6.7			27.0	27.0
Actuated g/C Ratio	0.09	0.64		0.01	0.56	0.56		0.05			0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	152	1187		10	1037	881		79			344	307
v/s Ratio Prot	c0.08	c0.76		0.01	0.48			c0.01			c0.22	
v/s Ratio Perm						0.11						0.04
v/c Ratio	0.93	1.19		1.00	0.86	0.20		0.11			1.16	0.19
Uniform Delay, d1	63.2	25.2		69.2	26.1	15.4		63.4			56.1	46.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	51.4	95.7		284.6	7.0	0.1		0.6			99.4	0.3
Delay (s)	114.5	121.0		353.8	33.1	15.5		64.0			155.5	47.2
Level of Service	F	F		F	C	B		E			F	D
Approach Delay (s)		120.4			32.6			64.0			128.3	
Approach LOS		F			C			E			F	

Intersection Summary				
HCM 2000 Control Delay	90.9	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.14			
Actuated Cycle Length (s)	139.2	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	109.0%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	348	1400	15	13	865	38	6	3	10	32	4	198
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	378	1522	16	14	940	41	7	3	11	35	4	215
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	982			1538			3472	3296	1530	3280	3284	961
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	982			1538			3472	3296	1530	3280	3284	961
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	46			97			0	16	92	0	0	31
cM capacity (veh/h)	703			432			0	4	144	1	4	311

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	378	1538	14	982	21	39	215
Volume Left	378	0	14	0	7	35	0
Volume Right	0	16	0	41	11	0	215
cSH	703	1700	432	1700	0	1	311
Volume to Capacity	0.54	0.90	0.03	0.58	Err	41.02	0.69
Queue Length 95th (ft)	81	0	3	0	Err	Err	120
Control Delay (s)	15.9	0.0	13.6	0.0	Err	Err	39.0
Lane LOS	C		B		F	F	E
Approach Delay (s)	3.1		0.2		Err	1571.3	
Approach LOS					F	F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	884	890	122	661	72	387	331	411	95	351	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1741			1832	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.64			0.67	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1137			1233	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	961	967	133	718	78	421	360	447	103	382	24
RTOR Reduction (vph)	0	0	77	0	0	30	0	15	0	0	1	0
Lane Group Flow (vph)	30	961	890	133	718	48	0	1213	0	0	508	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	3.2	45.8	45.8	6.0	48.6	48.6		77.0			77.0	
Effective Green, g (s)	3.2	45.8	45.8	6.0	48.6	48.6		77.0			77.0	
Actuated g/C Ratio	0.02	0.33	0.33	0.04	0.35	0.35		0.55			0.55	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	40	606	514	75	643	546		621			674	
v/s Ratio Prot	0.02	0.52		c0.08	c0.39							
v/s Ratio Perm			c0.56			0.03		c1.07			0.41	
v/c Ratio	0.75	1.59	1.73	1.77	1.12	0.09		1.95			0.75	
Uniform Delay, d1	68.4	47.5	47.5	67.4	46.1	31.1		31.9			24.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	55.2	271.4	337.3	396.3	72.0	0.1		434.9			4.8	
Delay (s)	123.6	318.9	384.8	463.7	118.1	31.2		466.8			29.3	
Level of Service	F	F	F	F	F	C		F			C	
Approach Delay (s)		348.5			160.3			466.8			29.3	
Approach LOS		F			F			F			C	

Intersection Summary				
HCM 2000 Control Delay	307.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.85			
Actuated Cycle Length (s)	140.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	155.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	41	28	6	820	1206	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	30	7	891	1311	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2237	1333	1354			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2237	1333	1354			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	3	84	99			
cM capacity (veh/h)	46	188	508			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	75	7	891	1354
Volume Left	45	7	0	0
Volume Right	30	0	0	43
cSH	66	508	1700	1700
Volume to Capacity	1.13	0.01	0.52	0.80
Queue Length 95th (ft)	147	1	0	0
Control Delay (s)	256.7	12.2	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	256.7	0.1		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	0	91	16	0	22	114	721	8	13	965	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	0	99	17	0	24	124	784	9	14	1049	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2151	2132	1063	2226	2141	788	1077			792		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2151	2132	1063	2226	2141	788	1077			792		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	64	0	100	94	81			98		
cM capacity (veh/h)	28	39	271	16	39	391	647			828		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	41	916	1091
Volume Left	28	17	124	14
Volume Right	99	24	9	28
cSH	91	37	647	828
Volume to Capacity	1.39	1.12	0.19	0.02
Queue Length 95th (ft)	237	105	18	1
Control Delay (s)	312.7	352.2	5.3	0.6
Lane LOS	F	F	A	A
Approach Delay (s)	312.7	352.2	5.3	0.6
Approach LOS	F	F		

Intersection Summary				
Average Delay		27.5		
Intersection Capacity Utilization	115.5%	ICU Level of Service	H	
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	597	159	135	195	680	510
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	649	173	147	212	739	554
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1522	1016	1293			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1522	1016	1293			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	40	73			
cM capacity (veh/h)	95	289	536			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	822	359	1293
Volume Left	649	147	0
Volume Right	173	0	554
cSH	110	536	1700
Volume to Capacity	7.46	0.27	0.76
Queue Length 95th (ft)	Err	28	0
Control Delay (s)	Err	8.5	0.0
Lane LOS	F	A	
Approach Delay (s)	Err	8.5	0.0
Approach LOS	F		

Intersection Summary				
Average Delay		3322.5		
Intersection Capacity Utilization	137.4%	ICU Level of Service	H	
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	116	34	451	187	74	880
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	126	37	490	203	80	957
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	1709	592			693	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1748	425			545	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	93			91	
cM capacity (veh/h)	72	532			865	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	163	693	80	957
Volume Left	126	0	80	0
Volume Right	37	203	0	0
cSH	90	1700	865	1700
Volume to Capacity	1.81	0.41	0.09	0.56
Queue Length 95th (ft)	340	0	8	0
Control Delay (s)	483.5	0.0	9.6	0.0
Lane LOS	F		A	
Approach Delay (s)	483.5	0.0	0.7	
Approach LOS	F			

Intersection Summary				
Average Delay		42.0		
Intersection Capacity Utilization		61.5%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	168	303	12	104	28	142	262	19	74	934	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1804		1770	1844		1770	1863	1583
Flt Permitted	0.57	1.00	1.00	0.48	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1069	1863	1583	887	1804		1770	1844		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	183	329	13	113	30	154	285	21	80	1015	279
RTOR Reduction (vph)	0	0	208	0	11	0	0	3	0	0	0	117
Lane Group Flow (vph)	224	183	121	13	132	0	154	303	0	80	1015	162
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	16.1	16.1	16.1	16.1	16.1		9.0	53.3		6.8	51.1	51.1
Effective Green, g (s)	16.1	16.1	16.1	16.1	16.1		9.0	53.3		6.8	51.1	51.1
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18		0.10	0.60		0.08	0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	195	340	288	161	329		180	1114		136	1079	917
v/s Ratio Prot		0.10			0.07		c0.09	0.16		0.05	c0.54	
v/s Ratio Perm	c0.21		0.08	0.01								0.10
v/c Ratio	1.15	0.54	0.42	0.08	0.40		0.86	0.27		0.59	0.94	0.18
Uniform Delay, d1	36.0	32.7	31.9	29.9	31.8		39.0	8.3		39.3	17.1	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	110.2	1.6	1.0	0.2	0.8		30.6	0.1		6.4	15.2	0.1
Delay (s)	146.3	34.3	32.9	30.1	32.6		69.6	8.4		45.7	32.4	8.8
Level of Service	F	C	C	C	C		E	A		D	C	A
Approach Delay (s)		67.8			32.4			28.9			28.4	
Approach LOS		E			C			C			C	

Intersection Summary				
HCM 2000 Control Delay		39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio		0.97		
Actuated Cycle Length (s)		88.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization		88.9%	ICU Level of Service	E
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	414	2776	1836	732	902	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3388		1770	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3388		1770	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	450	3017	1996	796	980	218
RTOR Reduction (vph)	0	0	28	0	1	53
Lane Group Flow (vph)	450	3017	2764	0	1001	143
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	21.0	93.0	68.0		49.0	49.0
Effective Green, g (s)	21.0	93.0	68.0		49.0	49.0
Actuated g/C Ratio	0.14	0.62	0.45		0.33	0.33
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	247	2194	1535		578	491
v/s Ratio Prot	c0.25	0.85	c0.82		c0.57	
v/s Ratio Perm						0.10
v/c Ratio	1.82	1.38	1.80		1.73	0.29
Uniform Delay, d1	64.5	28.5	41.0		50.5	37.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	385.3	171.8	362.8		336.8	0.3
Delay (s)	449.8	200.3	403.8		387.3	37.9
Level of Service	F	F	F		F	D
Approach Delay (s)		232.7	403.8		330.1	
Approach LOS		F	F		F	

Intersection Summary			
HCM 2000 Control Delay	312.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	161.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2854	416	570	1847	8	372	10	776	6	6	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1759	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1690	1583	1681	1759	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	3102	452	620	2008	9	404	11	843	7	7	8
RTOR Reduction (vph)	0	0	201	0	0	2	0	0	124	0	0	0
Lane Group Flow (vph)	8	3102	251	620	2008	7	206	209	719	6	8	8
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.3	73.4	73.4	32.0	104.1	104.1	16.0	16.0	48.0	4.0	4.0	4.0
Effective Green, g (s)	1.3	73.4	73.4	32.0	104.1	104.1	16.0	16.0	48.0	4.0	4.0	4.0
Actuated g/C Ratio	0.01	0.52	0.52	0.23	0.74	0.74	0.11	0.11	0.34	0.03	0.03	0.03
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	2639	821	776	3743	1165	190	191	582	47	49	44
v/s Ratio Prot	0.00	c0.61		0.18	0.39		0.12	0.12	c0.28	0.00	0.00	
v/s Ratio Perm			0.16			0.00			0.17			c0.01
v/c Ratio	0.26	1.18	0.31	0.80	0.54	0.01	1.08	1.09	1.24	0.13	0.16	0.18
Uniform Delay, d1	69.6	34.0	19.4	51.7	8.1	4.9	62.7	62.7	46.7	67.0	67.1	67.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	83.3	0.2	5.8	0.1	0.0	89.5	92.5	120.6	1.2	1.6	2.0
Delay (s)	74.0	117.3	19.6	57.4	8.3	4.9	152.2	155.2	167.3	68.2	68.6	69.1
Level of Service	E	F	B	E	A	A	F	F	F	E	E	E
Approach Delay (s)		104.8			19.8			162.8			68.7	
Approach LOS		F			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	84.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	141.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

3: SR 94 & Jamacha Rd. & Dwy

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	2949	1466	619	1719	107	1094	45	608	111	29	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	3205	1593	673	1868	116	1189	49	661	121	32	67
RTOR Reduction (vph)	0	0	127	0	0	33	0	0	31	0	0	61
Lane Group Flow (vph)	101	3205	1466	673	1868	83	1189	49	630	121	32	6
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.7	67.0	99.0	19.0	73.3	73.3	32.0	32.0	51.0	14.0	14.0	14.0
Effective Green, g (s)	12.7	67.0	99.0	19.0	73.3	73.3	32.0	32.0	51.0	14.0	14.0	14.0
Actuated g/C Ratio	0.09	0.45	0.67	0.13	0.50	0.50	0.22	0.22	0.34	0.09	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	151	2301	1058	440	2518	784	742	402	588	167	176	149
v/s Ratio Prot	0.06	c0.63	0.30	c0.20	0.37		c0.35	0.03	0.14	c0.07	0.02	
v/s Ratio Perm			0.63			0.05			0.26			0.00
v/c Ratio	0.67	1.39	1.39	1.53	0.74	0.11	1.60	0.12	1.07	0.72	0.18	0.04
Uniform Delay, d1	65.6	40.5	24.5	64.5	29.8	19.9	58.0	46.7	48.5	65.1	61.7	60.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	179.5	179.4	249.6	1.2	0.1	277.4	0.1	57.5	14.4	0.5	0.1
Delay (s)	76.3	220.0	203.9	314.1	31.0	20.0	335.4	46.8	106.0	79.6	62.2	61.0
Level of Service	E	F	F	F	C	B	F	D	F	E	E	E
Approach Delay (s)		211.8			102.2			248.1			71.4	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	185.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	122.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: SR 94 & Cougar Canyon Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	163	1574	1024	50	101	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1711	1113	54	110	204
RTOR Reduction (vph)	0	0	0	13	0	129
Lane Group Flow (vph)	177	1711	1113	41	110	75
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	9.9	126.0	112.1	112.1	13.5	23.4
Effective Green, g (s)	9.9	126.0	112.1	112.1	13.5	23.4
Actuated g/C Ratio	0.07	0.85	0.76	0.76	0.09	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	1591	1415	1203	162	294
v/s Ratio Prot	0.05	c0.92	0.60		c0.06	0.02
v/s Ratio Perm				0.03		0.03
v/c Ratio	0.77	1.08	0.79	0.03	0.68	0.26
Uniform Delay, d1	67.7	10.8	10.6	4.4	64.9	54.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.3	45.9	3.0	0.0	10.8	0.5
Delay (s)	82.0	56.6	13.5	4.4	75.7	54.9
Level of Service	F	E	B	A	E	D
Approach Delay (s)		59.0	13.1		62.2	
Approach LOS		E	B		E	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	147.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	1532	1	8	973	154	2	3	31	327	0	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1639			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1639			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	1665	1	9	1058	167	2	3	34	355	0	124
RTOR Reduction (vph)	0	0	0	0	0	40	0	32	0	0	0	80
Lane Group Flow (vph)	140	1666	0	9	1058	127	0	7	0	0	355	44
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	14.2	96.6		0.8	83.2	83.2		6.7			23.0	23.0
Effective Green, g (s)	14.2	96.6		0.8	83.2	83.2		6.7			23.0	23.0
Actuated g/C Ratio	0.10	0.68		0.01	0.58	0.58		0.05			0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	175	1257		9	1083	920		76			284	254
v/s Ratio Prot	c0.08	c0.89		0.01	0.57			c0.00			c0.20	
v/s Ratio Perm						0.08						0.03
v/c Ratio	0.80	1.33		1.00	0.98	0.14		0.09			1.25	0.17
Uniform Delay, d1	63.1	23.2		71.1	29.0	13.6		65.3			60.0	51.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	22.4	152.0		300.0	21.7	0.1		0.5			138.3	0.3
Delay (s)	85.5	175.3		371.1	50.7	13.7		65.8			198.3	52.2
Level of Service	F	F		F	D	B		E			F	D
Approach Delay (s)		168.3			48.0			65.8			160.5	
Approach LOS		F			D			E			F	

Intersection Summary				
HCM 2000 Control Delay	124.4	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.25			
Actuated Cycle Length (s)	143.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	118.8%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	386	1373	9	7	910	46	6	3	17	30	6	195
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	420	1492	10	8	989	50	7	3	18	33	7	212
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1039			1502			3556	3391	1497	3381	3371	1014
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1039			1502			3556	3391	1497	3381	3371	1014
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	37			98			0	0	88	0	0	27
cM capacity (veh/h)	669			446			0	3	151	0	3	290

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	420	1502	8	1039	28	39	212
Volume Left	420	0	8	0	7	33	0
Volume Right	0	10	0	50	18	0	212
cSH	669	1700	446	1700	0	0	290
Volume to Capacity	0.63	0.88	0.02	0.61	Err	Err	0.73
Queue Length 95th (ft)	110	0	1	0	Err	Err	132
Control Delay (s)	19.0	0.0	13.2	0.0	Err	Err	45.1
Lane LOS	C		B		F	F	E
Approach Delay (s)	4.1		0.1		Err	Err	
Approach LOS					F	F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	899	825	129	596	82	327	335	324	78	337	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1751			1758	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.54			0.79	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		968			1391	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	977	897	140	648	89	355	364	352	85	366	271
RTOR Reduction (vph)	0	0	66	0	0	48	0	12	0	0	15	0
Lane Group Flow (vph)	315	977	831	140	648	41	0	1059	0	0	707	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	15.0	47.0	47.0	7.0	39.0	39.0		84.0			84.0	
Effective Green, g (s)	15.0	47.0	47.0	7.0	39.0	39.0		84.0			84.0	
Actuated g/C Ratio	0.10	0.31	0.31	0.05	0.26	0.26		0.56			0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	177	583	496	82	484	411		542			778	
v/s Ratio Prot	c0.18	0.52		0.08	0.35							
v/s Ratio Perm			c0.52			0.03		c1.09			0.51	
v/c Ratio	1.78	1.68	1.68	1.71	1.34	0.10		1.95			0.91	
Uniform Delay, d1	67.5	51.5	51.5	71.5	55.5	42.2		33.0			29.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	372.7	311.6	312.8	364.6	166.0	0.1		436.0			14.4	
Delay (s)	440.2	363.1	364.3	436.1	221.5	42.3		469.0			44.0	
Level of Service	F	F	F	F	F	D		F			D	
Approach Delay (s)		374.7			237.5			469.0			44.0	
Approach LOS		F			F			F			D	

Intersection Summary				
HCM 2000 Control Delay	321.6	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.89			
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	160.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	33	15	622	1070	78
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	36	16	676	1163	85
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1914	1205	1248			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1914	1205	1248			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	2	84	97			
cM capacity (veh/h)	72	224	558			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	107	16	676	1248
Volume Left	71	16	0	0
Volume Right	36	0	0	85
cSH	94	558	1700	1700
Volume to Capacity	1.14	0.03	0.40	0.73
Queue Length 95th (ft)	179	2	0	0
Control Delay (s)	217.9	11.6	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	217.9	0.3		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	13	81	7	0	50	74	527	8	59	818	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	14	88	8	0	54	80	573	9	64	889	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1829	1779	908	1870	1793	577	927			582		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1829	1779	908	1870	1793	577	927			582		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	17	79	74	75	100	89	89			94		
cM capacity (veh/h)	46	69	334	30	67	516	737			993		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	140	62	662	991
Volume Left	38	8	80	64
Volume Right	88	54	9	38
cSH	108	172	737	993
Volume to Capacity	1.30	0.36	0.11	0.06
Queue Length 95th (ft)	238	38	9	5
Control Delay (s)	259.5	37.1	2.8	1.8
Lane LOS	F	E	A	A
Approach Delay (s)	259.5	37.1	2.8	1.8
Approach LOS	F	E		

Intersection Summary				
Average Delay		22.8		
Intersection Capacity Utilization	77.2%	ICU Level of Service	D	
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	373	99	112	234	575	421
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	405	108	122	254	625	458
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1352	854	1083			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1352	854	1083			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	70	81			
cM capacity (veh/h)	134	359	644			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	513	376	1083
Volume Left	405	122	0
Volume Right	108	0	458
cSH	155	644	1700
Volume to Capacity	3.32	0.19	0.64
Queue Length 95th (ft)	Err	17	0
Control Delay (s)	Err	5.6	0.0
Lane LOS	F	A	
Approach Delay (s)	Err	5.6	0.0
Approach LOS	F		

Intersection Summary				
Average Delay		2602.8		
Intersection Capacity Utilization	111.2%	ICU Level of Service	H	
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	118	42	314	194	82	775
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	46	341	211	89	842
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1467	447			552	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1462	260			385	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	93			91	
cM capacity (veh/h)	110	661			998	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	174	552	89	842
Volume Left	128	0	89	0
Volume Right	46	211	0	0
cSH	141	1700	998	1700
Volume to Capacity	1.24	0.32	0.09	0.50
Queue Length 95th (ft)	261	0	7	0
Control Delay (s)	214.9	0.0	9.0	0.0
Lane LOS	F		A	
Approach Delay (s)	214.9	0.0	0.9	
Approach LOS	F			

Intersection Summary			
Average Delay	23.0		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	175	254	12	106	37	171	287	19	82	764	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1791		1770	1845		1770	1863	1583
Flt Permitted	0.62	1.00	1.00	0.54	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1146	1863	1583	1014	1791		1770	1845		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	190	276	13	115	40	186	312	21	89	830	182
RTOR Reduction (vph)	0	0	213	0	18	0	0	3	0	0	0	94
Lane Group Flow (vph)	238	190	63	13	137	0	186	330	0	89	830	88
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	15.7	15.7	15.7	15.7	15.7		8.0	34.7		6.7	33.4	33.4
Effective Green, g (s)	15.7	15.7	15.7	15.7	15.7		8.0	34.7		6.7	33.4	33.4
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23		0.12	0.50		0.10	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	260	423	359	230	406		204	926		171	900	765
v/s Ratio Prot		0.10			0.08		c0.11	0.18		0.05	c0.45	
v/s Ratio Perm	c0.21		0.04	0.01								0.06
v/c Ratio	0.92	0.45	0.17	0.06	0.34		0.91	0.36		0.52	0.92	0.11
Uniform Delay, d1	26.1	23.0	21.5	20.9	22.3		30.2	10.4		29.7	16.6	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	33.9	0.8	0.2	0.1	0.5		39.2	0.2		2.8	14.6	0.1
Delay (s)	60.0	23.7	21.7	21.0	22.8		69.5	10.7		32.5	31.2	9.8
Level of Service	E	C	C	C	C		E	B		C	C	A
Approach Delay (s)		35.2			22.7			31.7			27.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	186	1897	1553	674	730	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3378		1768	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3378		1768	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	202	2062	1688	733	793	262
RTOR Reduction (vph)	0	0	33	0	1	79
Lane Group Flow (vph)	202	2062	2388	0	818	157
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.0	94.0	78.0		48.0	48.0
Effective Green, g (s)	12.0	94.0	78.0		48.0	48.0
Actuated g/C Ratio	0.08	0.63	0.52		0.32	0.32
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	141	2217	1756		565	481
v/s Ratio Prot	c0.11	0.58	c0.71		c0.46	
v/s Ratio Perm						0.10
v/c Ratio	1.43	0.93	1.36		1.45	0.33
Uniform Delay, d1	69.0	25.1	36.0		51.0	38.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	230.4	7.7	165.8		211.6	0.4
Delay (s)	299.4	32.8	201.8		262.6	39.1
Level of Service	F	C	F		F	D
Approach Delay (s)		56.6	201.8		212.6	
Approach LOS		E	F		F	

Intersection Summary			
HCM 2000 Control Delay	146.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	2152	347	563	1922	42	293	23	666	6	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1697	1583	1681	1760	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1697	1583	1681	1760	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	2339	377	612	2089	46	318	25	724	7	8	9
RTOR Reduction (vph)	0	0	194	0	0	16	0	0	133	0	0	0
Lane Group Flow (vph)	118	2339	183	612	2089	30	172	171	591	6	9	9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.7	62.1	62.1	30.1	82.5	82.5	15.6	15.6	45.7	4.0	4.0	4.0
Effective Green, g (s)	9.7	62.1	62.1	30.1	82.5	82.5	15.6	15.6	45.7	4.0	4.0	4.0
Actuated g/C Ratio	0.08	0.49	0.49	0.24	0.65	0.65	0.12	0.12	0.36	0.03	0.03	0.03
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	260	2470	769	808	3282	1021	205	207	615	52	55	49
v/s Ratio Prot	0.03	c0.46		0.18	0.41		0.10	0.10	c0.23	0.00	0.01	
v/s Ratio Perm			0.12			0.02			0.15			c0.01
v/c Ratio	0.45	0.95	0.24	0.76	0.64	0.03	0.84	0.83	0.96	0.12	0.16	0.18
Uniform Delay, d1	56.5	31.3	19.1	45.5	13.6	8.2	54.9	54.8	40.2	60.2	60.3	60.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	8.6	0.2	4.1	0.4	0.0	24.8	22.8	26.7	1.0	1.4	1.8
Delay (s)	57.8	39.9	19.3	49.5	14.0	8.2	79.7	77.6	66.9	61.2	61.7	62.1
Level of Service	E	D	B	D	B	A	E	E	E	E	E	E
Approach Delay (s)		37.9			21.9			70.7			61.7	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	127.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

3: SR 94 & Jamacha Rd. & Dwy

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	2179	911	510	1678	77	1064	72	566	86	40	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	2368	990	554	1824	84	1157	78	615	93	43	71
RTOR Reduction (vph)	0	0	107	0	0	31	0	0	44	0	0	65
Lane Group Flow (vph)	91	2368	883	554	1824	53	1157	78	571	93	43	6
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.3	67.1	97.1	21.0	75.8	75.8	30.0	30.0	51.0	12.6	12.6	12.6
Effective Green, g (s)	12.3	67.1	97.1	21.0	75.8	75.8	30.0	30.0	51.0	12.6	12.6	12.6
Actuated g/C Ratio	0.08	0.46	0.66	0.14	0.52	0.52	0.20	0.20	0.35	0.09	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	148	2325	1047	491	2627	817	702	380	593	152	160	135
v/s Ratio Prot	0.05	c0.47	0.17	c0.16	0.36		c0.34	0.04	c0.14	c0.05	0.02	
v/s Ratio Perm			0.39			0.03			0.22			0.00
v/c Ratio	0.61	1.02	0.84	1.13	0.69	0.06	1.65	0.21	0.96	0.61	0.27	0.05
Uniform Delay, d1	64.9	39.8	19.0	62.8	26.7	17.7	58.3	48.5	46.9	64.7	62.7	61.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	23.5	6.3	80.8	0.8	0.0	298.0	0.3	27.6	7.1	0.9	0.1
Delay (s)	72.3	63.3	25.3	143.6	27.5	17.8	356.4	48.7	74.5	71.8	63.6	61.7
Level of Service	E	E	C	F	C	B	F	D	E	E	E	E
Approach Delay (s)		52.6			53.3			249.7			66.6	
Approach LOS		D			D			F			E	

Intersection Summary				
HCM 2000 Control Delay	99.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.14			
Actuated Cycle Length (s)	146.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	103.7%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

4: SR 94 & Cougar Canyon Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	951	954	4	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	1034	1037	4	1	7
RTOR Reduction (vph)	0	0	0	1	0	6
Lane Group Flow (vph)	4	1034	1037	3	1	1
Turn Type	Prot	NA	NA	Perm	NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	0.6	39.9	35.3	35.3	5.8	6.4
Effective Green, g (s)	0.6	39.9	35.3	35.3	5.8	6.4
Actuated g/C Ratio	0.01	0.74	0.66	0.66	0.11	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	38	1384	1224	1040	191	306
v/s Ratio Prot	0.00	c0.56	c0.56		c0.00	0.00
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.11	0.75	0.85	0.00	0.01	0.00
Uniform Delay, d1	26.3	4.0	7.1	3.2	21.4	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	2.2	5.6	0.0	0.0	0.0
Delay (s)	27.5	6.2	12.7	3.2	21.4	20.8
Level of Service	C	A	B	A	C	C
Approach Delay (s)		6.3	12.7		20.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	908	0	3	904	181	2	3	11	222	3	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1675			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1675			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	987	0	3	983	197	2	3	12	241	3	85
RTOR Reduction (vph)	0	0	0	0	0	37	0	11	0	0	0	72
Lane Group Flow (vph)	73	987	0	3	983	160	0	6	0	0	244	13
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	5.0	64.4		0.8	60.2	60.2		6.1			16.0	16.0
Effective Green, g (s)	5.0	64.4		0.8	60.2	60.2		6.1			16.0	16.0
Actuated g/C Ratio	0.05	0.62		0.01	0.58	0.58		0.06			0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	85	1161		13	1085	922		98			274	245
v/s Ratio Prot	c0.04	0.53		0.00	c0.53			c0.00			c0.14	
v/s Ratio Perm						0.10						0.01
v/c Ratio	0.86	0.85		0.23	0.91	0.17		0.06			0.89	0.05
Uniform Delay, d1	48.8	15.6		50.9	19.0	10.0		45.9			42.8	37.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	53.3	6.1		8.9	10.7	0.1		0.2			28.1	0.1
Delay (s)	102.1	21.7		59.9	29.8	10.1		46.1			70.8	37.3
Level of Service	F	C		E	C	B		D			E	D
Approach Delay (s)		27.2			26.6			46.1			62.2	
Approach LOS		C			C			D			E	

Intersection Summary				
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	80.4%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	192	1041	7	13	901	56	6	0	14	6	0	190
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	209	1132	8	14	979	61	7	0	15	7	0	207
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1040			1139			2767	2621	1135	2602	2595	1010
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1040			1139			2767	2621	1135	2602	2595	1010
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	69			98			0	100	94	43	100	29
cM capacity (veh/h)	668			613			3	16	246	11	17	291

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	209	1139	14	1040	22	7	207
Volume Left	209	0	14	0	7	7	0
Volume Right	0	8	0	61	15	0	207
cSH	668	1700	613	1700	9	11	291
Volume to Capacity	0.31	0.67	0.02	0.61	2.47	0.57	0.71
Queue Length 95th (ft)	33	0	2	0	94	32	124
Control Delay (s)	12.8	0.0	11.0	0.0	1499.5	519.8	42.6
Lane LOS	B		B		F	F	E
Approach Delay (s)	2.0		0.1		1499.5	57.2	
Approach LOS					F	F	

Intersection Summary			
Average Delay	18.1		
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	683	609	122	724	66	371	186	233	64	245	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1748			1830	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.64			0.78	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1140			1444	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	742	662	133	787	72	403	202	253	70	266	21
RTOR Reduction (vph)	0	0	86	0	0	31	0	14	0	0	2	0
Lane Group Flow (vph)	20	742	576	133	787	41	0	844	0	0	355	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.6	38.4	38.4	6.0	42.8	42.8		56.0			56.0	
Effective Green, g (s)	1.6	38.4	38.4	6.0	42.8	42.8		56.0			56.0	
Actuated g/C Ratio	0.01	0.34	0.34	0.05	0.38	0.38		0.50			0.50	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	25	636	540	94	709	602		567			719	
v/s Ratio Prot	0.01	0.40		c0.08	c0.42							
v/s Ratio Perm			0.36			0.03		c0.74			0.25	
v/c Ratio	0.80	1.17	1.07	1.41	1.11	0.07		1.49			0.49	
Uniform Delay, d1	55.2	37.0	37.0	53.2	34.8	22.1		28.2			18.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	95.2	91.3	58.0	237.9	68.1	0.0		229.1			0.5	
Delay (s)	150.4	128.3	95.0	291.1	102.9	22.2		257.3			19.3	
Level of Service	F	F	F	F	F	C		F			B	
Approach Delay (s)		113.1			122.3			257.3			19.3	
Approach LOS		F			F			F			B	

Intersection Summary				
HCM 2000 Control Delay	140.5	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.36			
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	118.2%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	16	8	757	965	19
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	17	9	823	1049	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1899	1059	1070			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1899	1059	1070			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	72	94	99			
cM capacity (veh/h)	75	273	652			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	38	9	823	1070
Volume Left	21	9	0	0
Volume Right	17	0	0	21
cSH	112	652	1700	1700
Volume to Capacity	0.34	0.01	0.48	0.63
Queue Length 95th (ft)	34	1	0	0
Control Delay (s)	52.7	10.6	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	52.7	0.1		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	0	95	6	0	24	103	752	8	13	720	31
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	0	103	7	0	26	112	817	9	14	783	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1899	1878	799	1977	1890	822	816			826		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1899	1878	799	1977	1890	822	816			826		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	100	73	78	100	93	86			98		
cM capacity (veh/h)	43	60	385	30	59	374	811			805		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	122	33	938	830
Volume Left	18	7	112	14
Volume Right	103	26	9	34
cSH	175	113	811	805
Volume to Capacity	0.70	0.29	0.14	0.02
Queue Length 95th (ft)	105	27	12	1
Control Delay (s)	62.7	49.1	3.6	0.5
Lane LOS	F	E	A	A
Approach Delay (s)	62.7	49.1	3.6	0.5
Approach LOS	F	E		

Intersection Summary				
Average Delay		6.8		
Intersection Capacity Utilization	104.7%		ICU Level of Service	G
Analysis Period (min)		15		

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	597	163	136	229	422	512
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	649	177	148	249	459	557
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1282	737	1015			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1282	737	1015			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	58	78			
cM capacity (veh/h)	143	418	683			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	826	397	1015
Volume Left	649	148	0
Volume Right	177	0	557
cSH	167	683	1700
Volume to Capacity	4.96	0.22	0.60
Queue Length 95th (ft)	Err	20	0
Control Delay (s)	Err	6.2	0.0
Lane LOS	F	A	
Approach Delay (s)	Err	6.2	0.0
Approach LOS	F		

Intersection Summary				
Average Delay		3691.8		
Intersection Capacity Utilization	126.2%		ICU Level of Service	H
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	135	45	409	125	49	578
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	147	49	445	136	53	628
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	1247	512			580	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1212	375			452	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	12	92			95	
cM capacity (veh/h)	167	589			973	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	196	580	53	628
Volume Left	147	0	53	0
Volume Right	49	136	0	0
cSH	203	1700	973	1700
Volume to Capacity	0.96	0.34	0.05	0.37
Queue Length 95th (ft)	203	0	4	0
Control Delay (s)	102.3	0.0	8.9	0.0
Lane LOS	F		A	
Approach Delay (s)	102.3	0.0	0.7	
Approach LOS	F			

Intersection Summary			
Average Delay	14.1		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	113	163	14	122	39	134	336	13	49	499	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1796		1770	1852		1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.68	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1189	1863	1583	1263	1796		1770	1852		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	123	177	15	133	42	146	365	14	53	542	230
RTOR Reduction (vph)	0	0	132	0	19	0	0	2	0	0	0	134
Lane Group Flow (vph)	201	123	45	15	156	0	146	377	0	53	542	96
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	13.3	13.3	13.3	13.3	13.3		5.1	23.7		3.1	21.7	21.7
Effective Green, g (s)	13.3	13.3	13.3	13.3	13.3		5.1	23.7		3.1	21.7	21.7
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26		0.10	0.45		0.06	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	303	475	404	322	458		173	842		105	775	659
v/s Ratio Prot		0.07			0.09		c0.08	0.20		0.03	c0.29	
v/s Ratio Perm	c0.17		0.03	0.01								0.06
v/c Ratio	0.66	0.26	0.11	0.05	0.34		0.84	0.45		0.50	0.70	0.15
Uniform Delay, d1	17.4	15.5	14.9	14.6	15.8		23.1	9.7		23.8	12.5	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.4	0.3	0.1	0.1	0.4		29.5	0.4		3.8	2.8	0.1
Delay (s)	22.8	15.8	15.0	14.7	16.3		52.6	10.1		27.5	15.3	9.5
Level of Service	C	B	B	B	B		D	B		C	B	A
Approach Delay (s)		18.3			16.1			21.9			14.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	77	1371	2313	611	565	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.97		0.99	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3428		1760	1504
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3428		1760	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1490	2514	664	614	500
RTOR Reduction (vph)	0	0	17	0	2	47
Lane Group Flow (vph)	84	1490	3161	0	662	403
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	5.0	97.0	88.0		35.0	35.0
Effective Green, g (s)	5.0	97.0	88.0		35.0	35.0
Actuated g/C Ratio	0.04	0.69	0.63		0.25	0.25
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	63	2452	2154		440	376
v/s Ratio Prot	c0.05	0.42	c0.92		c0.38	
v/s Ratio Perm						0.27
v/c Ratio	1.33	0.61	1.47		1.50	1.07
Uniform Delay, d1	67.5	11.4	26.0		52.5	52.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	225.9	0.4	212.9		238.4	66.6
Delay (s)	293.4	11.8	238.9		290.9	119.1
Level of Service	F	B	F		F	F
Approach Delay (s)		26.9	238.9		221.5	
Approach LOS		C	F		F	

Intersection Summary			
HCM 2000 Control Delay	178.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1431	207	565	2214	14	543	11	587	4	6	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	1555	225	614	2407	15	590	12	638	4	7	0
RTOR Reduction (vph)	0	0	133	0	0	6	0	0	265	0	0	0
Lane Group Flow (vph)	14	1555	92	614	2407	9	0	602	373	4	7	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	2.3	45.7	45.7	24.8	68.2	68.2		23.3	48.1	2.4	2.4	
Effective Green, g (s)	2.3	45.7	45.7	24.8	68.2	68.2		23.3	48.1	2.4	2.4	
Actuated g/C Ratio	0.02	0.41	0.41	0.22	0.61	0.61		0.21	0.43	0.02	0.02	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	70	2071	644	758	3090	962		368	1294	35	37	
v/s Ratio Prot	0.00	0.31		c0.18	c0.47			c0.34	0.06	0.00	c0.00	
v/s Ratio Perm			0.06			0.01			0.07			
v/c Ratio	0.20	0.75	0.14	0.81	0.78	0.01		1.64	0.29	0.11	0.19	
Uniform Delay, d1	54.0	28.4	20.9	41.5	16.4	8.7		44.5	20.9	53.9	53.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	1.6	0.1	6.5	1.3	0.0		298.2	0.1	1.5	2.5	
Delay (s)	55.5	30.0	21.0	48.0	17.7	8.7		342.7	21.0	55.3	56.4	
Level of Service	E	C	C	D	B	A		F	C	E	E	
Approach Delay (s)		29.0			23.8			177.2			56.0	
Approach LOS		C			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	56.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1392	923	439	1937	50	1320	75	673	27	22	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1513	1003	477	2105	54	1435	82	732	29	24	41
RTOR Reduction (vph)	0	0	221	0	0	31	0	0	98	0	0	39
Lane Group Flow (vph)	82	1513	782	477	2105	23	1435	82	634	29	24	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.0	45.1	99.2	19.0	59.1	59.1	54.1	54.1	73.1	6.6	6.6	6.6
Effective Green, g (s)	5.0	45.1	99.2	19.0	59.1	59.1	54.1	54.1	73.1	6.6	6.6	6.6
Actuated g/C Ratio	0.04	0.32	0.70	0.13	0.42	0.42	0.38	0.38	0.52	0.05	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	62	1628	1963	463	2134	664	1319	715	866	82	87	74
v/s Ratio Prot	0.05	0.30	0.15	c0.14	c0.41		c0.42	0.04	0.10	c0.02	0.01	
v/s Ratio Perm			0.13			0.01			0.30			0.00
v/c Ratio	1.32	0.93	0.40	1.03	0.99	0.03	1.09	0.11	0.73	0.35	0.28	0.03
Uniform Delay, d1	67.9	46.3	8.5	60.9	40.5	24.0	43.4	27.9	26.3	65.0	64.8	64.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	222.7	9.7	0.1	49.8	16.2	0.0	52.3	0.1	3.2	2.6	1.7	0.1
Delay (s)	290.6	56.0	8.7	110.7	56.7	24.1	95.7	28.0	29.5	67.7	66.5	64.2
Level of Service	F	E	A	F	E	C	F	C	C	E	E	E
Approach Delay (s)		45.1			65.8			71.7			65.8	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	60.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	390	750	1125	299	122	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	815	1223	325	133	478
RTOR Reduction (vph)	0	0	0	112	0	66
Lane Group Flow (vph)	424	815	1223	213	133	412
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	15.0	96.1	77.1	77.1	13.3	28.3
Effective Green, g (s)	15.0	96.1	77.1	77.1	13.3	28.3
Actuated g/C Ratio	0.13	0.82	0.66	0.66	0.11	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	438	1524	1223	1039	200	435
v/s Ratio Prot	0.12	0.44	c0.66		0.08	c0.12
v/s Ratio Perm				0.13		0.14
v/c Ratio	0.97	0.53	1.00	0.21	0.67	0.95
Uniform Delay, d1	51.0	3.4	20.2	8.0	49.9	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.4	0.4	25.7	0.1	8.1	29.8
Delay (s)	85.3	3.8	45.9	8.1	58.0	73.6
Level of Service	F	A	D	A	E	E
Approach Delay (s)		31.7	38.0		70.2	
Approach LOS		C	D		E	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

SR 94 Improvement Project — Horizon Year (2035) Weekday with Project Alt 1-2

5: Steele Canyon Rd. & SR 94

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	762	0	4	1155	234	5	2	2	177	0	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3450			1758			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3450			1758			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	828	0	4	1255	254	5	2	2	192	0	329
RTOR Reduction (vph)	0	0	0	0	15	0	0	2	0	0	0	204
Lane Group Flow (vph)	149	828	0	4	1494	0	0	7	0	0	192	125
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	9.1	60.6		0.7	52.2			6.0			14.2	14.2
Effective Green, g (s)	9.1	60.6		0.7	52.2			6.0			14.2	14.2
Actuated g/C Ratio	0.09	0.62		0.01	0.54			0.06			0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	165	2199		12	1847			108			257	230
v/s Ratio Prot	c0.08	0.23		0.00	c0.43			c0.00			c0.11	
v/s Ratio Perm												0.08
v/c Ratio	0.90	0.38		0.33	0.81			0.07			0.75	0.54
Uniform Delay, d1	43.8	9.1		48.2	18.6			43.1			39.9	38.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	43.0	0.1		15.7	2.7			0.3			11.2	2.6
Delay (s)	86.8	9.2		63.8	21.3			43.4			51.2	41.2
Level of Service	F	A		E	C			D			D	D
Approach Delay (s)		21.0			21.4			43.4			44.9	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	72.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project — Horizon Year (2035) Weekday with Project Alt 1-2

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	724	7	13	1020	21	12	2	12	32	7	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1770	1860		1770	1857			1706			1790	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.78	1.00
Satd. Flow (perm)	1770	1860		1770	1857			1554			1461	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	787	8	14	1109	23	13	2	13	35	8	434
RTOR Reduction (vph)	0	0	0	0	1	0	0	11	0	0	0	172
Lane Group Flow (vph)	201	795	0	14	1131	0	0	17	0	0	43	262
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	5.1	64.9		1.4	61.2			13.3			13.3	13.3
Effective Green, g (s)	5.1	64.9		1.4	61.2			13.3			13.3	13.3
Actuated g/C Ratio	0.06	0.71		0.02	0.67			0.15			0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	98	1317		27	1240			225			212	229
v/s Ratio Prot	c0.11	c0.43		0.01	c0.61							
v/s Ratio Perm								0.01			0.03	c0.17
v/c Ratio	2.05	0.60		0.52	0.91			0.08			0.20	1.14
Uniform Delay, d1	43.2	6.8		44.8	12.9			33.8			34.5	39.1
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	506.4	0.8		15.8	10.3			0.1			0.5	104.1
Delay (s)	549.7	7.6		60.6	23.2			34.0			35.0	143.3
Level of Service	F	A		E	C			C			C	F
Approach Delay (s)		117.0			23.6			34.0			133.5	
Approach LOS		F			C			C			F	

Intersection Summary				
HCM 2000 Control Delay	78.7	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	93.0%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	544	226	48	664	80	782	365	87	97	365	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1788			1779	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.43			0.73	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		794			1303	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	591	246	52	722	87	850	397	95	105	397	196
RTOR Reduction (vph)	0	0	29	0	0	32	0	2	0	0	10	0
Lane Group Flow (vph)	130	591	217	52	722	55	0	1340	0	0	688	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	7.0	38.2	38.2	5.6	36.8	36.8		95.0			95.0	
Effective Green, g (s)	7.0	38.2	38.2	5.6	36.8	36.8		95.0			95.0	
Actuated g/C Ratio	0.05	0.25	0.25	0.04	0.24	0.24		0.63			0.63	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	82	471	400	65	454	386		500			820	
v/s Ratio Prot	c0.07	0.32		0.03	c0.39							
v/s Ratio Perm			0.14			0.03		c1.69			0.53	
v/c Ratio	1.59	1.25	0.54	0.80	1.59	0.14		2.68			0.84	
Uniform Delay, d1	71.9	56.3	48.7	72.0	57.0	44.6		27.9			21.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	313.4	131.1	1.5	48.8	275.9	0.2		761.8			7.6	
Delay (s)	385.3	187.4	50.2	120.9	332.9	44.8		789.7			29.5	
Level of Service	F	F	D	F	F	D		F			C	
Approach Delay (s)		179.1			291.0			789.7			29.5	
Approach LOS		F			F			F			C	

Intersection Summary				
HCM 2000 Control Delay	388.9	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	2.33			
Actuated Cycle Length (s)	150.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	158.3%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	6	6	846	565	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	7	7	920	614	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1556	623	633			
vC1, stage 1 conf vol	623					
vC2, stage 2 conf vol	933					
vCu, unblocked vol	1556	623	633			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	99			
cM capacity (veh/h)	323	486	950			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	15	7	920	633
Volume Left	9	7	0	0
Volume Right	7	0	0	18
cSH	377	950	1700	1700
Volume to Capacity	0.04	0.01	0.54	0.37
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	15.0	8.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	15.0	0.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	0	78	6	0	47	40	579	26	55	439	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.88		1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1664			1632		1770	1851		1770	1843	
Flt Permitted		0.87			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1475			1590		1770	1851		1770	1843	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	0	85	7	0	51	43	629	28	60	477	37
RTOR Reduction (vph)	0	102	0	0	52	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	22	0	0	6	0	43	655	0	60	510	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		4.2			4.2		1.4	22.3		1.4	22.3	
Effective Green, g (s)		4.2			4.2		1.4	22.3		1.4	22.3	
Actuated g/C Ratio		0.11			0.11		0.04	0.56		0.04	0.56	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		155			167		62	1034		62	1030	
v/s Ratio Prot							0.02	c0.35		c0.03	0.28	
v/s Ratio Perm		c0.01			0.00							
v/c Ratio		0.14			0.04		0.69	0.63		0.97	0.50	
Uniform Delay, d1		16.2			16.0		19.0	6.0		19.2	5.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			0.1		28.5	1.3		101.8	0.4	
Delay (s)		16.6			16.1		47.6	7.3		121.0	5.7	
Level of Service		B			B		D	A		F	A	
Approach Delay (s)		16.6			16.1			9.8			17.8	
Approach LOS		B			B			A			B	

Intersection Summary				
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	39.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	58.8%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	141	38	88	443	316	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	41	96	482	343	361
RTOR Reduction (vph)	0	35	0	0	0	192
Lane Group Flow (vph)	153	6	96	482	343	169
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	5.6	5.6	2.2	23.7	17.5	17.5
Effective Green, g (s)	5.6	5.6	2.2	23.7	17.5	17.5
Actuated g/C Ratio	0.15	0.15	0.06	0.64	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	515	237	104	1183	874	742
v/s Ratio Prot			c0.05	c0.26	0.18	
v/s Ratio Perm	c0.04	0.00				0.11
v/c Ratio	0.30	0.03	0.92	0.41	0.39	0.23
Uniform Delay, d1	14.1	13.5	17.5	3.3	6.4	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	63.7	0.2	0.3	0.2
Delay (s)	14.4	13.6	81.2	3.6	6.7	6.0
Level of Service	B	B	F	A	A	A
Approach Delay (s)	14.2			16.5	6.4	
Approach LOS	B			B	A	

Intersection Summary				
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	35.5%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	196	74	731	72	19	211
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	213	80	795	78	21	229
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.65	0.65			0.65	
vC, conflicting volume	1104	834			873	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	888	469			529	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	79			97	
cM capacity (veh/h)	197	384			671	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	293	873	21	229
Volume Left	213	0	21	0
Volume Right	80	78	0	0
cSH	227	1700	671	1700
Volume to Capacity	1.29	0.51	0.03	0.13
Queue Length 95th (ft)	386	0	2	0
Control Delay (s)	202.8	0.0	10.5	0.0
Lane LOS	F		B	
Approach Delay (s)	202.8	0.0	0.9	
Approach LOS	F			

Intersection Summary			
Average Delay	42.2		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	65	167	20	176	70	239	730	7	19	354	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1783		1770	1860		1770	1863	1583
Flt Permitted	0.44	1.00	1.00	0.71	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	817	1863	1583	1324	1783		1770	1860		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	71	182	22	191	76	260	793	8	21	385	210
RTOR Reduction (vph)	0	0	140	0	25	0	0	0	0	0	0	137
Lane Group Flow (vph)	142	71	42	22	242	0	260	801	0	21	385	73
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	12.7	12.7	12.7	12.7	12.7		11.1	29.4		0.7	19.0	19.0
Effective Green, g (s)	12.7	12.7	12.7	12.7	12.7		11.1	29.4		0.7	19.0	19.0
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23		0.20	0.54		0.01	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	189	431	366	306	413		358	997		22	645	548
v/s Ratio Prot		0.04			0.14		c0.15	c0.43		0.01	0.21	
v/s Ratio Perm	c0.17		0.03	0.02								0.05
v/c Ratio	0.75	0.16	0.12	0.07	0.59		0.73	0.80		0.95	0.60	0.13
Uniform Delay, d1	19.6	16.8	16.6	16.4	18.7		20.4	10.3		27.0	14.7	12.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.4	0.2	0.1	0.1	2.1		7.2	4.7		169.9	1.5	0.1
Delay (s)	35.0	17.0	16.8	16.5	20.8		27.6	15.1		196.9	16.2	12.4
Level of Service	D	B	B	B	C		C	B		F	B	B
Approach Delay (s)		23.4			20.5			18.2			21.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

13: Jamacha Blvd. & Sweetwater Springs Blvd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	47	2051	147	12	14	1786	1108	150	16	1468	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799	1583	1770	1863	1583	3433	3476		1770	1863	1583
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1799	1583	1770	1863	1583	3433	3476		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	51	2229	160	13	15	1941	1204	163	17	1596	160
RTOR Reduction (vph)	0	0	21	0	0	13	0	7	0	0	0	61
Lane Group Flow (vph)	0	177	2208	160	13	2	1941	1360	0	17	1596	99
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		16.0	65.0	15.5	15.5	18.5	49.0	100.6		3.0	54.6	54.6
Effective Green, g (s)		16.0	65.0	15.5	15.5	18.5	49.0	100.6		3.0	54.6	54.6
Actuated g/C Ratio		0.11	0.43	0.10	0.10	0.12	0.32	0.67		0.02	0.36	0.36
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		190	680	181	191	235	1113	2314		35	673	572
v/s Ratio Prot		0.10	c1.05	c0.09	0.01	0.00	0.57	0.39		0.01	c0.86	
v/s Ratio Perm			0.34			0.00						0.06
v/c Ratio		0.93	3.25	0.88	0.07	0.01	1.74	0.59		0.49	2.37	0.17
Uniform Delay, d1		67.0	43.0	66.9	61.3	58.2	51.0	13.9		73.3	48.2	32.9
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		46.0	1015.3	36.2	0.2	0.0	338.5	1.1		10.2	621.8	0.7
Delay (s)		113.0	1058.4	103.1	61.4	58.3	389.6	15.0		83.5	670.0	33.5
Level of Service		F	F	F	E	E	F	B		F	F	C
Approach Delay (s)		988.8			96.6			234.8			606.9	
Approach LOS		F			F			F			F	

Intersection Summary				
HCM 2000 Control Delay	553.7	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	2.62			
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	222.4%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	932	572	248	1224	37	917	114	265	38	59	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	1013	622	270	1330	40	997	124	288	41	64	157
RTOR Reduction (vph)	0	0	272	0	0	30	0	0	117	0	0	123
Lane Group Flow (vph)	167	1013	350	270	1330	10	997	124	171	41	64	34
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	21.0	48.0	8.0	24.0	24.0	27.0	44.2	44.2	2.4	19.6	19.6
Effective Green, g (s)	5.0	21.0	48.0	8.0	24.0	24.0	27.0	44.2	44.2	2.4	19.6	19.6
Actuated g/C Ratio	0.05	0.23	0.52	0.09	0.26	0.26	0.29	0.48	0.48	0.03	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	187	1165	898	299	1332	414	1011	898	763	89	398	338
v/s Ratio Prot	0.05	0.20	0.11	c0.08	c0.26		c0.29	0.07		0.01	0.03	
v/s Ratio Perm			0.11			0.01			c0.11			0.02
v/c Ratio	0.89	0.87	0.39	0.90	1.00	0.03	0.99	0.14	0.22	0.46	0.16	0.10
Uniform Delay, d1	43.0	34.0	13.0	41.4	33.8	25.1	32.1	13.1	13.7	44.0	29.3	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.3	7.1	0.3	28.5	24.1	0.0	24.7	0.3	0.7	3.7	0.9	0.6
Delay (s)	80.3	41.1	13.3	69.9	57.9	25.1	56.8	13.5	14.4	47.7	30.2	29.5
Level of Service	F	D	B	E	E	C	E	B	B	D	C	C
Approach Delay (s)		35.2			59.1			44.3			32.5	
Approach LOS		D			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	70.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

15: Steele Canyon Rd. & Willow Glen Dr.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	231	537	414	228	14	826	58	369	6	80	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.87			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3509		1770	1621			1820	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3509		1770	1621			1820	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	251	584	450	248	15	898	63	401	7	87	16
RTOR Reduction (vph)	0	0	75	0	3	0	0	153	0	0	5	0
Lane Group Flow (vph)	8	251	509	450	260	0	898	311	0	0	105	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.8	20.3	88.3	33.0	52.5		68.0	68.0			13.1	
Effective Green, g (s)	0.8	20.3	88.3	33.0	52.5		68.0	68.0			13.1	
Actuated g/C Ratio	0.01	0.13	0.59	0.22	0.35		0.45	0.45			0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	9	251	971	388	1224		800	732			158	
v/s Ratio Prot	0.00	c0.13	0.24	c0.25	0.07		c0.51	0.19			c0.06	
v/s Ratio Perm			0.08									
v/c Ratio	0.89	1.00	0.52	1.16	0.21		1.12	0.43			0.67	
Uniform Delay, d1	74.8	65.0	18.5	58.7	34.4		41.2	27.9			66.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	230.5	56.8	0.5	96.9	0.1		71.1	1.8			10.2	
Delay (s)	305.2	121.9	19.0	155.6	34.5		112.3	29.7			76.7	
Level of Service	F	F	B	F	C		F	C			E	
Approach Delay (s)		52.4			110.9			84.2			76.7	
Approach LOS		D			F			F			E	

Intersection Summary				
HCM 2000 Control Delay	81.4	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.07			
Actuated Cycle Length (s)	150.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	97.5%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

16: Steele Canyon Rd. & Jamul Dr.

Timing Plan: AM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	502	1278	329	632	1268	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	546	1389	358	687	1378	379
RTOR Reduction (vph)	0	623	0	320	0	0
Lane Group Flow (vph)	546	766	358	367	1378	379
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	38.0	38.0	25.0	25.0	75.0	104.0
Effective Green, g (s)	38.0	38.0	25.0	25.0	75.0	104.0
Actuated g/C Ratio	0.25	0.25	0.17	0.17	0.50	0.69
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	448	401	310	263	885	1291
v/s Ratio Prot	0.31		0.19		c0.78	0.20
v/s Ratio Perm		c0.48		c0.23		
v/c Ratio	1.22	1.91	1.15	1.40	1.56	0.29
Uniform Delay, d1	56.0	56.0	62.5	62.5	37.5	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	117.2	419.1	99.9	199.5	256.2	0.6
Delay (s)	173.2	475.1	162.4	262.0	293.7	9.4
Level of Service	F	F	F	F	F	A
Approach Delay (s)	389.9		227.9			232.4
Approach LOS	F		F			F

Intersection Summary				
HCM 2000 Control Delay	295.8	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.62			
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	125.4%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

17: Lyons Valley Rd. & Jamul Dr.

Timing Plan: AM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	152	335	561	290	106	177
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	165	364	610	315	115	192
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	610				1304	610
vC1, stage 1 conf vol					610	
vC2, stage 2 conf vol					695	
vCu, unblocked vol	610				1304	610
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	83				67	61
cM capacity (veh/h)	969				347	495

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	165	364	610	315	308
Volume Left	165	0	0	0	115
Volume Right	0	0	0	315	192
cSH	969	1700	1700	1700	426
Volume to Capacity	0.17	0.21	0.36	0.19	0.72
Queue Length 95th (ft)	15	0	0	0	141
Control Delay (s)	9.5	0.0	0.0	0.0	32.4
Lane LOS	A				D
Approach Delay (s)	3.0		0.0		32.4
Approach LOS					D

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

18: Jefferson Rd. & Lyons Valley Rd.

Timing Plan: AM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	123	96	636	370	217	458
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	134	104	691	402	236	498
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			238		1971	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			238		1971	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			48		0	42
cM capacity (veh/h)			1329		33	856

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	238	691	402	734
Volume Left	0	691	0	236
Volume Right	104	0	0	498
cSH	1700	1329	1700	95
Volume to Capacity	0.14	0.52	0.24	7.74
Queue Length 95th (ft)	0	78	0	Err
Control Delay (s)	0.0	10.6	0.0	Err
Lane LOS		B		F
Approach Delay (s)	0.0	6.7		Err
Approach LOS				F

Intersection Summary			
Average Delay	3555.8		
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	875	80	56	28	25	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	951	87	61	30	27	250

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	1038	91	277
Volume Left (vph)	951	0	27
Volume Right (vph)	0	30	250
Hadj (s)	0.22	-0.17	-0.49
Departure Headway (s)	5.1	5.5	5.5
Degree Utilization, x	1.0	0.14	0.42
Capacity (veh/h)	704	627	650
Control Delay (s)	232.6	9.4	12.3
Approach Delay (s)	232.6	9.4	12.3
Approach LOS	F	A	B

Intersection Summary			
Delay		174.7	
Level of Service		F	
Intersection Capacity Utilization		81.6%	ICU Level of Service D
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	934	36	18	1434	75	69
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1015	39	20	1559	82	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1054		2633	1035
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1054		2633	1035
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		0	73
cM capacity (veh/h)			660		25	282

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1054	1578	157
Volume Left	0	20	82
Volume Right	39	0	75
cSH	1700	660	45
Volume to Capacity	0.62	0.03	3.49
Queue Length 95th (ft)	0	2	Err
Control Delay (s)	0.0	3.9	Err
Lane LOS		A	F
Approach Delay (s)	0.0	3.9	Err
Approach LOS			F

Intersection Summary			
Average Delay		563.3	
Intersection Capacity Utilization		104.9%	ICU Level of Service G
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	334	2251	1766	804	911	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3373		1768	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3373		1768	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	363	2447	1920	874	990	330
RTOR Reduction (vph)	0	0	37	0	1	85
Lane Group Flow (vph)	363	2447	2757	0	1022	212
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	17.0	84.0	63.0		48.0	48.0
Effective Green, g (s)	17.0	84.0	63.0		48.0	48.0
Actuated g/C Ratio	0.12	0.60	0.45		0.34	0.34
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	214	2123	1517		606	515
v/s Ratio Prot	c0.21	0.69	c0.82		c0.58	
v/s Ratio Perm						0.14
v/c Ratio	1.70	1.15	1.82		1.69	0.41
Uniform Delay, d1	61.5	28.0	38.5		46.0	35.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	332.6	74.6	370.3		316.3	0.5
Delay (s)	394.1	102.6	408.8		362.3	35.7
Level of Service	F	F	F		F	D
Approach Delay (s)		140.2	408.8		288.8	
Approach LOS		F	F		F	

Intersection Summary			
HCM 2000 Control Delay	276.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	159.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	2690	418	660	2085	6	385	6	872	9	5	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1775	2787	1681	1737	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1775	2787	1681	1737	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2924	454	717	2266	7	418	7	948	10	5	3
RTOR Reduction (vph)	0	0	210	0	0	2	0	0	215	0	0	0
Lane Group Flow (vph)	11	2924	244	717	2266	5	0	425	733	7	8	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	2.4	66.8	66.8	33.9	98.3	98.3		16.1	50.0	2.6	2.6	2.6
Effective Green, g (s)	2.4	66.8	66.8	33.9	98.3	98.3		16.1	50.0	2.6	2.6	2.6
Actuated g/C Ratio	0.02	0.49	0.49	0.25	0.73	0.73		0.12	0.37	0.02	0.02	0.02
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	60	2508	780	859	3691	1149		211	1111	32	33	30
v/s Ratio Prot	0.00	c0.57		c0.21	0.45			c0.24	c0.17	0.00	c0.00	
v/s Ratio Perm			0.15			0.00			0.10			0.00
v/c Ratio	0.18	1.17	0.31	0.83	0.61	0.00		2.01	0.66	0.22	0.24	0.10
Uniform Delay, d1	65.5	34.3	20.5	48.1	9.2	5.1		59.7	35.6	65.4	65.4	65.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	79.4	0.2	7.0	0.3	0.0		472.8	1.4	3.4	3.8	1.5
Delay (s)	67.0	113.7	20.8	55.1	9.5	5.1		532.4	37.0	68.8	69.2	66.7
Level of Service	E	F	C	E	A	A		F	D	E	E	E
Approach Delay (s)		101.1			20.4			190.4			68.7	
Approach LOS		F			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	85.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	135.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

3: SR 94 & Jamacha Rd. & Dwy

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	2698	1192	642	1854	123	1074	57	636	121	62	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	2933	1296	698	2015	134	1167	62	691	132	67	90
RTOR Reduction (vph)	0	0	101	0	0	32	0	0	24	0	0	82
Lane Group Flow (vph)	129	2933	1195	698	2015	102	1167	62	667	132	67	8
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.2	69.0	99.0	22.0	75.8	75.8	30.0	30.0	52.0	12.8	12.8	12.8
Effective Green, g (s)	15.2	69.0	99.0	22.0	75.8	75.8	30.0	30.0	52.0	12.8	12.8	12.8
Actuated g/C Ratio	0.10	0.46	0.66	0.15	0.51	0.51	0.20	0.20	0.35	0.09	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179	2342	1841	504	2573	801	687	373	591	151	159	135
v/s Ratio Prot	0.07	c0.58	0.13	c0.20	0.40		c0.34	0.03	0.17	c0.07	0.04	
v/s Ratio Perm			0.30			0.06			0.26			0.00
v/c Ratio	0.72	1.25	0.65	1.38	0.78	0.13	1.70	0.17	1.13	0.87	0.42	0.06
Uniform Delay, d1	65.2	40.4	15.1	63.9	30.3	19.5	59.9	49.6	48.9	67.7	65.0	63.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.3	117.3	0.8	185.2	1.6	0.1	320.7	0.2	78.1	38.9	1.8	0.2
Delay (s)	78.6	157.7	15.9	249.1	31.9	19.6	380.6	49.8	127.0	106.6	66.8	63.1
Level of Service	E	F	B	F	C	B	F	D	F	F	E	E
Approach Delay (s)		113.2			84.6			278.6			83.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	137.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	149.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	117.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: SR 94 & Cougar Canyon Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	115	1429	940	48	70	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	1553	1022	52	76	165
RTOR Reduction (vph)	0	0	0	13	0	139
Lane Group Flow (vph)	125	1553	1022	39	76	26
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	8.6	106.1	93.5	93.5	10.7	19.3
Effective Green, g (s)	8.6	106.1	93.5	93.5	10.7	19.3
Actuated g/C Ratio	0.07	0.85	0.75	0.75	0.09	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	1583	1395	1185	151	295
v/s Ratio Prot	0.04	c0.83	0.55		c0.04	0.01
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.53	0.98	0.73	0.03	0.50	0.09
Uniform Delay, d1	56.1	8.4	8.7	4.0	54.5	45.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	18.2	2.0	0.0	2.6	0.1
Delay (s)	58.3	26.6	10.7	4.0	57.1	45.3
Level of Service	E	C	B	A	E	D
Approach Delay (s)		29.0	10.4		49.0	
Approach LOS		C	B		D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	124.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	1303	1	9	816	200	2	5	28	360	7	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3435			1654			1776	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3435			1654			1776	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	1416	1	10	887	217	2	5	30	391	8	134
RTOR Reduction (vph)	0	0	0	0	18	0	0	28	0	0	0	70
Lane Group Flow (vph)	141	1417	0	10	1086	0	0	9	0	0	399	64
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	12.1	54.4		0.7	43.0			6.5			27.3	27.3
Effective Green, g (s)	12.1	54.4		0.7	43.0			6.5			27.3	27.3
Actuated g/C Ratio	0.12	0.52		0.01	0.41			0.06			0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	204	1835		11	1408			102			462	411
v/s Ratio Prot	c0.08	c0.40		0.01	0.32			c0.01			c0.22	
v/s Ratio Perm												0.04
v/c Ratio	0.69	0.77		0.91	0.77			0.09			0.86	0.16
Uniform Delay, d1	44.6	20.3		52.1	26.7			46.4			37.0	29.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	9.7	2.1		217.6	2.7			0.4			15.3	0.2
Delay (s)	54.3	22.4		269.6	29.4			46.8			52.3	30.1
Level of Service	D	C		F	C			D			D	C
Approach Delay (s)		25.2			31.6			46.8			46.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	104.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	348	1400	15	13	865	38	6	3	10	32	4	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99			0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1770	1860		1770	1851			1703			1783	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.91			0.73	1.00
Satd. Flow (perm)	1770	1860		1770	1851			1570			1365	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	1522	16	14	940	41	7	3	11	35	4	215
RTOR Reduction (vph)	0	0	0	0	1	0	0	10	0	0	0	200
Lane Group Flow (vph)	378	1538	0	14	980	0	0	11	0	0	39	15
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	32.5	118.3		1.5	87.3			9.6			9.6	9.6
Effective Green, g (s)	32.5	118.3		1.5	87.3			9.6			9.6	9.6
Actuated g/C Ratio	0.23	0.84		0.01	0.62			0.07			0.07	0.07
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	406	1556		18	1142			106			92	107
v/s Ratio Prot	c0.21	c0.83		0.01	0.53							
v/s Ratio Perm								0.01			c0.03	0.01
v/c Ratio	0.93	0.99		0.78	0.86			0.10			0.42	0.14
Uniform Delay, d1	53.4	10.9		69.8	22.0			61.9			63.2	62.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	28.0	19.8		107.6	6.6			0.4			3.1	0.6
Delay (s)	81.3	30.7		177.4	28.6			62.3			66.4	62.6
Level of Service	F	C		F	C			E			E	E
Approach Delay (s)		40.7			30.7			62.3			63.2	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	141.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	884	890	122	661	72	387	331	411	95	351	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1741			1832	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.64			0.67	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1137			1233	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	961	967	133	718	78	421	360	447	103	382	24
RTOR Reduction (vph)	0	0	77	0	0	30	0	15	0	0	1	0
Lane Group Flow (vph)	30	961	890	133	718	48	0	1213	0	0	508	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	3.2	45.8	45.8	6.0	48.6	48.6		77.0			77.0	
Effective Green, g (s)	3.2	45.8	45.8	6.0	48.6	48.6		77.0			77.0	
Actuated g/C Ratio	0.02	0.33	0.33	0.04	0.35	0.35		0.55			0.55	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	40	606	514	75	643	546		621			674	
v/s Ratio Prot	0.02	0.52		c0.08	c0.39							
v/s Ratio Perm			c0.56			0.03		c1.07			0.41	
v/c Ratio	0.75	1.59	1.73	1.77	1.12	0.09		1.95			0.75	
Uniform Delay, d1	68.4	47.5	47.5	67.4	46.1	31.1		31.9			24.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	55.2	271.4	337.3	396.3	72.0	0.1		434.9			4.8	
Delay (s)	123.6	318.9	384.8	463.7	118.1	31.2		466.8			29.3	
Level of Service	F	F	F	F	F	C		F			C	
Approach Delay (s)		348.5			160.3			466.8			29.3	
Approach LOS		F			F			F			C	

Intersection Summary				
HCM 2000 Control Delay	307.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.85			
Actuated Cycle Length (s)	140.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	155.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	41	28	6	820	1206	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	30	7	891	1311	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2237	1333	1354			
vC1, stage 1 conf vol	1333					
vC2, stage 2 conf vol	904					
vCu, unblocked vol	2237	1333	1354			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	84	99			
cM capacity (veh/h)	206	188	508			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	75	7	891	1354
Volume Left	45	7	0	0
Volume Right	30	0	0	43
cSH	198	508	1700	1700
Volume to Capacity	0.38	0.01	0.52	0.80
Queue Length 95th (ft)	41	1	0	0
Control Delay (s)	33.8	12.2	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	33.8	0.1		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	0	91	16	0	22	114	721	8	13	965	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1649			1681		1770	1860		1770	1855	
Flt Permitted		0.91			0.88		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1520			1506		1770	1860		1770	1855	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	0	99	17	0	24	124	784	9	14	1049	28
RTOR Reduction (vph)	0	100	0	0	36	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	27	0	0	5	0	124	793	0	14	1076	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		5.5			5.5		4.0	25.7		0.8	22.5	
Effective Green, g (s)		5.5			5.5		4.0	25.7		0.8	22.5	
Actuated g/C Ratio		0.12			0.12		0.09	0.58		0.02	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		190			188		160	1086		32	948	
v/s Ratio Prot							c0.07	c0.43		0.01	c0.58	
v/s Ratio Perm		c0.02			0.00							
v/c Ratio		0.14			0.03		0.78	0.73		0.44	1.13	
Uniform Delay, d1		17.2			16.9		19.6	6.6		21.4	10.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.1		20.6	2.5		9.3	73.7	
Delay (s)		17.5			17.0		40.1	9.1		30.7	84.4	
Level of Service		B			B		D	A		C	F	
Approach Delay (s)		17.5			17.0			13.3			83.8	
Approach LOS		B			B			B			F	

Intersection Summary				
HCM 2000 Control Delay	48.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	44.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.4%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	597	159	135	195	680	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	649	173	147	212	739	554
RTOR Reduction (vph)	0	122	0	0	0	358
Lane Group Flow (vph)	649	51	147	212	739	196
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	13.5	13.5	4.0	24.1	16.1	16.1
Effective Green, g (s)	13.5	13.5	4.0	24.1	16.1	16.1
Actuated g/C Ratio	0.30	0.30	0.09	0.53	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1016	468	155	984	657	558
v/s Ratio Prot			c0.08	0.11	c0.40	
v/s Ratio Perm	c0.19	0.03				0.12
v/c Ratio	0.64	0.11	0.95	0.22	1.12	0.35
Uniform Delay, d1	13.9	11.7	20.7	5.7	14.8	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	56.3	0.1	74.7	0.4
Delay (s)	15.3	11.8	77.0	5.8	89.5	11.3
Level of Service	B	B	E	A	F	B
Approach Delay (s)	14.5			35.0	56.0	
Approach LOS	B			C	E	

Intersection Summary				
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	116	34	451	187	74	880
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	126	37	490	203	80	957
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.83	0.83			0.83	
vC, conflicting volume	1709	592			693	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1752	407			529	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	93			91	
cM capacity (veh/h)	71	535			862	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	163	693	80	957
Volume Left	126	0	80	0
Volume Right	37	203	0	0
cSH	88	1700	862	1700
Volume to Capacity	1.85	0.41	0.09	0.56
Queue Length 95th (ft)	345	0	8	0
Control Delay (s)	502.6	0.0	9.6	0.0
Lane LOS	F		A	
Approach Delay (s)	502.6	0.0	0.7	
Approach LOS	F			

Intersection Summary				
Average Delay		43.7		
Intersection Capacity Utilization		61.5%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	168	303	12	104	28	142	262	19	74	934	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1804		1770	1844		1770	1863	1583
Flt Permitted	0.57	1.00	1.00	0.48	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1069	1863	1583	887	1804		1770	1844		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	183	329	13	113	30	154	285	21	80	1015	279
RTOR Reduction (vph)	0	0	208	0	11	0	0	3	0	0	0	117
Lane Group Flow (vph)	224	183	121	13	132	0	154	303	0	80	1015	162
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	16.1	16.1	16.1	16.1	16.1		9.0	53.3		6.8	51.1	51.1
Effective Green, g (s)	16.1	16.1	16.1	16.1	16.1		9.0	53.3		6.8	51.1	51.1
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18		0.10	0.60		0.08	0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	195	340	288	161	329		180	1114		136	1079	917
v/s Ratio Prot		0.10			0.07		c0.09	0.16		0.05	c0.54	
v/s Ratio Perm	c0.21		0.08	0.01								0.10
v/c Ratio	1.15	0.54	0.42	0.08	0.40		0.86	0.27		0.59	0.94	0.18
Uniform Delay, d1	36.0	32.7	31.9	29.9	31.8		39.0	8.3		39.3	17.1	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	110.2	1.6	1.0	0.2	0.8		30.6	0.1		6.4	15.2	0.1
Delay (s)	146.3	34.3	32.9	30.1	32.6		69.6	8.4		45.7	32.4	8.8
Level of Service	F	C	C	C	C		E	A		D	C	A
Approach Delay (s)		67.8			32.4			28.9			28.4	
Approach LOS		E			C			C			C	

Intersection Summary				
HCM 2000 Control Delay		39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio		0.97		
Actuated Cycle Length (s)		88.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization		88.9%	ICU Level of Service	E
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	13	2176	229	41	19	856	1108	32	3	1851	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1780	1583	1770	1863	1583	3433	3524		1770	1863	1583
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1780	1583	1770	1863	1583	3433	3524		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	14	2365	249	45	21	930	1204	35	3	2012	146
RTOR Reduction (vph)	0	0	21	0	0	18	0	1	0	0	0	59
Lane Group Flow (vph)	0	201	2344	249	45	3	930	1238	0	3	2012	87
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		16.0	62.0	16.0	16.0	18.4	46.0	101.2		2.4	57.6	57.6
Effective Green, g (s)		16.0	62.0	16.0	16.0	18.4	46.0	101.2		2.4	57.6	57.6
Actuated g/C Ratio		0.11	0.41	0.11	0.11	0.12	0.30	0.67		0.02	0.38	0.38
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		187	647	186	196	233	1041	2352		28	707	601
v/s Ratio Prot		0.11	c1.10	c0.14	0.02	0.00	0.27	0.35		0.00	c1.08	
v/s Ratio Perm			0.38			0.00						0.06
v/c Ratio		1.07	3.62	1.34	0.23	0.01	0.89	0.53		0.11	2.85	0.14
Uniform Delay, d1		67.8	44.8	67.8	62.2	58.6	50.5	12.9		73.5	47.0	30.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		87.1	1183.9	184.1	0.6	0.0	9.9	0.8		1.7	834.5	0.5
Delay (s)		154.9	1228.7	251.9	62.8	58.6	60.4	13.8		75.2	881.5	31.3
Level of Service		F	F	F	E	E	E	B		E	F	C
Approach Delay (s)		1144.6			212.0			33.7			823.0	
Approach LOS		F			F			C			F	

Intersection Summary				
HCM 2000 Control Delay	673.3	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	3.02			
Actuated Cycle Length (s)	151.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	254.8%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	388	1261	1009	228	1272	86	827	87	165	152	130	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	422	1371	1097	248	1383	93	899	95	179	165	141	302
RTOR Reduction (vph)	0	0	132	0	0	69	0	0	115	0	0	129
Lane Group Flow (vph)	422	1371	965	248	1383	24	899	95	64	165	141	173
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	27.0	50.0	7.0	23.0	23.0	23.0	32.2	32.2	7.8	17.0	17.0
Effective Green, g (s)	11.0	27.0	50.0	7.0	23.0	23.0	23.0	32.2	32.2	7.8	17.0	17.0
Actuated g/C Ratio	0.12	0.30	0.56	0.08	0.26	0.26	0.26	0.36	0.36	0.09	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	419	1525	949	267	1299	404	877	666	566	297	351	299
v/s Ratio Prot	c0.12	0.27	c0.26	0.07	0.27		c0.26	0.05		0.05	0.08	
v/s Ratio Perm			0.35			0.02			0.04			c0.11
v/c Ratio	1.01	0.90	1.02	0.93	1.06	0.06	1.03	0.14	0.11	0.56	0.40	0.58
Uniform Delay, d1	39.5	30.2	20.0	41.3	33.5	25.3	33.5	19.6	19.3	39.4	32.0	33.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.8	7.4	33.4	36.1	44.1	0.1	36.9	0.4	0.4	2.2	3.4	7.9
Delay (s)	85.3	37.6	53.4	77.3	77.6	25.4	70.4	20.0	19.7	41.7	35.4	41.2
Level of Service	F	D	D	E	E	C	E	C	B	D	D	D
Approach Delay (s)		50.6			74.8			58.6			40.0	
Approach LOS		D			E			E			D	

Intersection Summary				
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.99			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	85.8%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	476	724	341	375	9	424	22	231	11	33	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.86			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	3527		1770	1608			1778	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1583	1770	3527		1770	1608			1778	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	517	787	371	408	10	461	24	251	12	36	18
RTOR Reduction (vph)	0	0	165	0	2	0	0	180	0	0	12	0
Lane Group Flow (vph)	13	517	622	371	417	0	461	95	0	0	54	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	1.5	34.5	66.6	24.1	57.1		32.1	32.1			7.5	
Effective Green, g (s)	1.5	34.5	66.6	24.1	57.1		32.1	32.1			7.5	
Actuated g/C Ratio	0.01	0.30	0.58	0.21	0.50		0.28	0.28			0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	23	562	978	373	1763		497	451			116	
v/s Ratio Prot	0.01	c0.28	0.18	c0.21	0.12		c0.26	0.06			c0.03	
v/s Ratio Perm			0.21									
v/c Ratio	0.57	0.92	0.64	0.99	0.24		0.93	0.21			0.46	
Uniform Delay, d1	56.0	38.5	15.8	45.0	16.2		39.9	31.4			51.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	28.1	20.2	1.4	44.9	0.1		25.9	1.1			2.9	
Delay (s)	84.1	58.7	17.1	89.9	16.3		65.8	32.4			54.3	
Level of Service	F	E	B	F	B		E	C			D	
Approach Delay (s)		34.1			50.9			53.3			54.3	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	44.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	114.2	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	84.1%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	482	229	248	1066	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	524	249	270	1159	438
RTOR Reduction (vph)	0	390	0	239	0	0
Lane Group Flow (vph)	380	134	249	31	1159	438
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	28.0	28.0	16.0	16.0	84.0	104.0
Effective Green, g (s)	28.0	28.0	16.0	16.0	84.0	104.0
Actuated g/C Ratio	0.20	0.20	0.11	0.11	0.60	0.74
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	354	316	212	180	1062	1383
v/s Ratio Prot	c0.21		c0.13		c0.65	0.24
v/s Ratio Perm		0.08		0.02		
v/c Ratio	1.07	0.42	1.17	0.17	1.09	0.32
Uniform Delay, d1	56.0	48.9	62.0	56.0	28.0	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	68.8	0.9	116.9	2.1	56.0	0.6
Delay (s)	124.8	49.9	178.9	58.1	84.0	6.7
Level of Service	F	D	F	E	F	A
Approach Delay (s)	81.3		116.0			62.8
Approach LOS	F		F			E

Intersection Summary			
HCM 2000 Control Delay	77.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

17: Lyons Valley Rd. & Jamul Dr.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	168	398	243	124	303	162
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	183	433	264	135	329	176
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	264				1062	264
vC1, stage 1 conf vol					264	
vC2, stage 2 conf vol					798	
vCu, unblocked vol	264				1062	264
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	86				9	77
cM capacity (veh/h)	1300				362	775

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	183	433	264	135	505
Volume Left	183	0	0	0	329
Volume Right	0	0	0	135	176
cSH	1300	1700	1700	1700	444
Volume to Capacity	0.14	0.25	0.16	0.08	1.14
Queue Length 95th (ft)	12	0	0	0	453
Control Delay (s)	8.2	0.0	0.0	0.0	115.8
Lane LOS	A				F
Approach Delay (s)	2.4		0.0		115.8
Approach LOS					F

Intersection Summary			
Average Delay	39.5		
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

18: Jefferson Rd. & Lyons Valley Rd.

Timing Plan: PM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	277	11	275	202	22	322
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	301	12	299	220	24	350
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			313		1124	307
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			313		1124	307
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			76		86	52
cM capacity (veh/h)			1247		173	733

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	313	299	220	374
Volume Left	0	299	0	24
Volume Right	12	0	0	350
cSH	1700	1247	1700	607
Volume to Capacity	0.18	0.24	0.13	0.62
Queue Length 95th (ft)	0	23	0	105
Control Delay (s)	0.0	8.8	0.0	20.0
Lane LOS		A		C
Approach Delay (s)	0.0	5.1		20.0
Approach LOS				C

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	479	81	99	54	29	409
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	521	88	108	59	32	445

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	609	166	476
Volume Left (vph)	521	0	32
Volume Right (vph)	0	59	445
Hadj (s)	0.21	-0.18	-0.51
Departure Headway (s)	5.9	6.3	5.7
Degree Utilization, x	1.00	0.29	0.75
Capacity (veh/h)	605	550	628
Control Delay (s)	60.4	11.9	23.6
Approach Delay (s)	60.4	11.9	23.6
Approach LOS	F	B	C

Intersection Summary			
Delay		40.0	
Level of Service		E	
Intersection Capacity Utilization		76.2%	ICU Level of Service D
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1688	124	41	973	32	43
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1835	135	45	1058	35	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1970		3049	1902
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1970		3049	1902
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			85		0	46
cM capacity (veh/h)			294		12	86

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1970	1102	82
Volume Left	0	45	35
Volume Right	135	0	47
cSH	1700	294	23
Volume to Capacity	1.16	0.15	3.48
Queue Length 95th (ft)	0	13	Err
Control Delay (s)	0.0	8.3	Err
Lane LOS		A	F
Approach Delay (s)	0.0	8.3	Err
Approach LOS			F

Intersection Summary			
Average Delay		261.4	
Intersection Capacity Utilization		107.4%	ICU Level of Service G
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	414	2776	1836	732	902	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3388		1770	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3388		1770	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	450	3017	1996	796	980	218
RTOR Reduction (vph)	0	0	28	0	1	53
Lane Group Flow (vph)	450	3017	2764	0	1001	143
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	21.0	93.0	68.0		49.0	49.0
Effective Green, g (s)	21.0	93.0	68.0		49.0	49.0
Actuated g/C Ratio	0.14	0.62	0.45		0.33	0.33
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	247	2194	1535		578	491
v/s Ratio Prot	c0.25	0.85	c0.82		c0.57	
v/s Ratio Perm						0.10
v/c Ratio	1.82	1.38	1.80		1.73	0.29
Uniform Delay, d1	64.5	28.5	41.0		50.5	37.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	385.3	171.8	362.8		336.8	0.3
Delay (s)	449.8	200.3	403.8		387.3	37.9
Level of Service	F	F	F		F	D
Approach Delay (s)		232.7	403.8		330.1	
Approach LOS		F	F		F	

Intersection Summary			
HCM 2000 Control Delay	312.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	161.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2854	416	570	1847	8	372	10	776	6	6	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1759	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1776	2787	1681	1759	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	3102	452	620	2008	9	404	11	843	7	7	8
RTOR Reduction (vph)	0	0	197	0	0	2	0	0	221	0	0	0
Lane Group Flow (vph)	8	3102	255	620	2008	7	0	415	622	6	8	8
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.2	73.5	73.5	29.5	101.8	101.8		16.1	45.6	3.9	3.9	3.9
Effective Green, g (s)	1.2	73.5	73.5	29.5	101.8	101.8		16.1	45.6	3.9	3.9	3.9
Actuated g/C Ratio	0.01	0.53	0.53	0.21	0.73	0.73		0.12	0.33	0.03	0.03	0.03
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	29	2688	837	728	3724	1159		205	994	47	49	44
v/s Ratio Prot	0.00	c0.61		c0.18	0.39			c0.23	c0.13	0.00	0.00	
v/s Ratio Perm			0.16			0.00			0.09			c0.01
v/c Ratio	0.28	1.15	0.30	0.85	0.54	0.01		2.02	0.63	0.13	0.16	0.18
Uniform Delay, d1	68.5	32.8	18.4	52.6	8.2	5.0		61.5	39.5	65.9	66.0	66.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	74.0	0.2	9.4	0.2	0.0		477.7	1.2	1.2	1.6	2.0
Delay (s)	73.6	106.8	18.6	62.1	8.4	5.0		539.2	40.7	67.1	67.5	68.0
Level of Service	E	F	B	E	A	A		F	D	E	E	E
Approach Delay (s)		95.5			21.0			205.2			67.6	
Approach LOS		F			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	87.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	139.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

3: SR 94 & Jamacha Rd. & Dwy

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	2949	1466	619	1719	107	1094	45	608	111	29	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	3205	1593	673	1868	116	1189	49	661	121	32	67
RTOR Reduction (vph)	0	0	224	0	0	33	0	0	31	0	0	61
Lane Group Flow (vph)	101	3205	1369	673	1868	83	1189	49	630	121	32	6
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.7	67.0	99.0	19.0	73.3	73.3	32.0	32.0	51.0	14.0	14.0	14.0
Effective Green, g (s)	12.7	67.0	99.0	19.0	73.3	73.3	32.0	32.0	51.0	14.0	14.0	14.0
Actuated g/C Ratio	0.09	0.45	0.67	0.13	0.50	0.50	0.22	0.22	0.34	0.09	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	151	2301	1864	440	2518	784	742	402	588	167	176	149
v/s Ratio Prot	0.06	c0.63	0.16	c0.20	0.37		c0.35	0.03	0.14	c0.07	0.02	
v/s Ratio Perm			0.33			0.05			0.26			0.00
v/c Ratio	0.67	1.39	0.73	1.53	0.74	0.11	1.60	0.12	1.07	0.72	0.18	0.04
Uniform Delay, d1	65.6	40.5	15.9	64.5	29.8	19.9	58.0	46.7	48.5	65.1	61.7	60.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	179.5	1.5	249.6	1.2	0.1	277.4	0.1	57.5	14.4	0.5	0.1
Delay (s)	76.3	220.0	17.5	314.1	31.0	20.0	335.4	46.8	106.0	79.6	62.2	61.0
Level of Service	E	F	B	F	C	B	F	D	F	E	E	E
Approach Delay (s)		151.2			102.2			248.1			71.4	
Approach LOS		F			F			F			E	

Intersection Summary				
HCM 2000 Control Delay	155.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.39			
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	122.5%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

4: SR 94 & Cougar Canyon Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	163	1574	1024	50	101	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1711	1113	54	110	204
RTOR Reduction (vph)	0	0	0	13	0	129
Lane Group Flow (vph)	177	1711	1113	41	110	75
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	9.9	126.0	112.1	112.1	13.5	23.4
Effective Green, g (s)	9.9	126.0	112.1	112.1	13.5	23.4
Actuated g/C Ratio	0.07	0.85	0.76	0.76	0.09	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	1591	1415	1203	162	294
v/s Ratio Prot	0.05	c0.92	0.60		c0.06	0.02
v/s Ratio Perm				0.03		0.03
v/c Ratio	0.77	1.08	0.79	0.03	0.68	0.26
Uniform Delay, d1	67.7	10.8	10.6	4.4	64.9	54.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.3	45.9	3.0	0.0	10.8	0.5
Delay (s)	82.0	56.6	13.5	4.4	75.7	54.9
Level of Service	F	E	B	A	E	D
Approach Delay (s)		59.0	13.1		62.2	
Approach LOS		E	B		E	

Intersection Summary				
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.07			
Actuated Cycle Length (s)	147.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	95.1%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	1532	1	8	973	154	2	3	31	327	0	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3467			1639			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3467			1639			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	1665	1	9	1058	167	2	3	34	355	0	124
RTOR Reduction (vph)	0	0	0	0	10	0	0	32	0	0	0	76
Lane Group Flow (vph)	140	1666	0	9	1215	0	0	7	0	0	355	48
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	12.9	60.6		0.6	48.3			6.5			21.5	21.5
Effective Green, g (s)	12.9	60.6		0.6	48.3			6.5			21.5	21.5
Actuated g/C Ratio	0.12	0.58		0.01	0.46			0.06			0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	217	2038		10	1591			101			361	323
v/s Ratio Prot	c0.08	c0.47		0.01	0.35			c0.00			c0.20	
v/s Ratio Perm												0.03
v/c Ratio	0.65	0.82		0.90	0.76			0.07			0.98	0.15
Uniform Delay, d1	44.0	17.9		52.3	23.7			46.5			41.7	34.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	6.4	2.7		226.0	2.2			0.3			42.6	0.2
Delay (s)	50.4	20.5		278.2	25.9			46.8			84.3	34.6
Level of Service	D	C		F	C			D			F	C
Approach Delay (s)		22.9			27.8			46.8			71.4	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	105.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	386	1373	9	7	910	46	6	3	17	30	6	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99			0.91			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.96	1.00
Satd. Flow (prot)	1770	1861		1770	1849			1680			1789	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.93			0.84	1.00
Satd. Flow (perm)	1770	1861		1770	1849			1578			1561	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	420	1492	10	8	989	50	7	3	18	33	7	212
RTOR Reduction (vph)	0	0	0	0	1	0	0	17	0	0	0	198
Lane Group Flow (vph)	420	1502	0	8	1038	0	0	11	0	0	40	14
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	21.0	118.2		0.7	97.9			9.5			9.5	9.5
Effective Green, g (s)	21.0	118.2		0.7	97.9			9.5			9.5	9.5
Actuated g/C Ratio	0.15	0.84		0.00	0.70			0.07			0.07	0.07
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	264	1566		8	1289			106			105	107
v/s Ratio Prot	c0.24	c0.81		0.00	0.56							
v/s Ratio Perm								0.01			c0.03	0.01
v/c Ratio	1.59	0.96		1.00	0.81			0.11			0.38	0.13
Uniform Delay, d1	59.7	9.1		69.9	14.7			61.5			62.6	61.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	283.1	14.0		318.2	3.8			0.4			2.3	0.6
Delay (s)	342.8	23.2		388.0	18.4			61.9			64.9	62.2
Level of Service	F	C		F	B			E			E	E
Approach Delay (s)		93.0			21.3			61.9			62.6	
Approach LOS		F			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	67.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	140.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	899	825	129	596	82	327	335	324	78	337	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1751			1758	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.54			0.79	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		968			1391	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	977	897	140	648	89	355	364	352	85	366	271
RTOR Reduction (vph)	0	0	66	0	0	48	0	12	0	0	15	0
Lane Group Flow (vph)	315	977	831	140	648	41	0	1059	0	0	707	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	15.0	47.0	47.0	7.0	39.0	39.0		84.0			84.0	
Effective Green, g (s)	15.0	47.0	47.0	7.0	39.0	39.0		84.0			84.0	
Actuated g/C Ratio	0.10	0.31	0.31	0.05	0.26	0.26		0.56			0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	177	583	496	82	484	411		542			778	
v/s Ratio Prot	c0.18	0.52		0.08	0.35							
v/s Ratio Perm			c0.52			0.03		c1.09			0.51	
v/c Ratio	1.78	1.68	1.68	1.71	1.34	0.10		1.95			0.91	
Uniform Delay, d1	67.5	51.5	51.5	71.5	55.5	42.2		33.0			29.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	372.7	311.6	312.8	364.6	166.0	0.1		436.0			14.4	
Delay (s)	440.2	363.1	364.3	436.1	221.5	42.3		469.0			44.0	
Level of Service	F	F	F	F	F	D		F			D	
Approach Delay (s)		374.7			237.5			469.0			44.0	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	321.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	160.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	33	15	622	1070	78
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	36	16	676	1163	85
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1914	1205	1248			
vC1, stage 1 conf vol	1205					
vC2, stage 2 conf vol	709					
vCu, unblocked vol	1914	1205	1248			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	71	84	97			
cM capacity (veh/h)	245	224	558			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	107	16	676	1248
Volume Left	71	16	0	0
Volume Right	36	0	0	85
cSH	238	558	1700	1700
Volume to Capacity	0.45	0.03	0.40	0.73
Queue Length 95th (ft)	54	2	0	0
Control Delay (s)	31.9	11.6	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	31.9	0.3		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	13	81	7	0	50	74	527	8	59	818	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.88		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1682			1633		1770	1858		1770	1851	
Flt Permitted		0.89			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1512			1584		1770	1858		1770	1851	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	14	88	8	0	54	80	573	9	64	889	38
RTOR Reduction (vph)	0	76	0	0	53	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	64	0	0	9	0	80	581	0	64	925	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		5.9			5.9		2.3	22.3		1.5	21.5	
Effective Green, g (s)		5.9			5.9		2.3	22.3		1.5	21.5	
Actuated g/C Ratio		0.14			0.14		0.06	0.53		0.04	0.52	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		213			224		97	993		63	954	
v/s Ratio Prot							c0.05	0.31		0.04	c0.50	
v/s Ratio Perm		c0.04			0.01							
v/c Ratio		0.30			0.04		0.82	0.59		1.02	0.97	
Uniform Delay, d1		16.1			15.5		19.5	6.6		20.1	9.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8			0.1		40.9	0.9		117.9	21.7	
Delay (s)		16.9			15.5		60.4	7.5		138.0	31.4	
Level of Service		B			B		E	A		F	C	
Approach Delay (s)		16.9			15.5			13.9			38.3	
Approach LOS		B			B			B			D	

Intersection Summary				
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	73.5%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	373	99	112	234	575	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	405	108	122	254	625	458
RTOR Reduction (vph)	0	82	0	0	0	272
Lane Group Flow (vph)	405	26	122	254	625	186
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	10.2	10.2	3.1	24.4	17.3	17.3
Effective Green, g (s)	10.2	10.2	3.1	24.4	17.3	17.3
Actuated g/C Ratio	0.24	0.24	0.07	0.57	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	821	379	128	1067	756	642
v/s Ratio Prot			c0.07	0.14	c0.34	
v/s Ratio Perm	c0.12	0.02				0.12
v/c Ratio	0.49	0.07	0.95	0.24	0.83	0.29
Uniform Delay, d1	14.0	12.5	19.7	4.5	11.3	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	64.7	0.1	7.4	0.3
Delay (s)	14.4	12.6	84.4	4.6	18.7	8.8
Level of Service	B	B	F	A	B	A
Approach Delay (s)	14.1			30.5	14.5	
Approach LOS	B			C	B	

Intersection Summary				
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	42.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	57.1%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	118	42	314	194	82	775
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	46	341	211	89	842
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.83	0.83			0.83	
vC, conflicting volume	1467	447			552	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1461	225			353	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	93			91	
cM capacity (veh/h)	107	673			996	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	174	552	89	842
Volume Left	128	0	89	0
Volume Right	46	211	0	0
cSH	137	1700	996	1700
Volume to Capacity	1.27	0.32	0.09	0.50
Queue Length 95th (ft)	267	0	7	0
Control Delay (s)	227.8	0.0	9.0	0.0
Lane LOS	F		A	
Approach Delay (s)	227.8	0.0	0.9	
Approach LOS	F			

Intersection Summary				
Average Delay		24.4		
Intersection Capacity Utilization		56.6%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	175	254	12	106	37	171	287	19	82	764	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1791		1770	1845		1770	1863	1583
Flt Permitted	0.62	1.00	1.00	0.54	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1146	1863	1583	1014	1791		1770	1845		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	190	276	13	115	40	186	312	21	89	830	182
RTOR Reduction (vph)	0	0	213	0	18	0	0	3	0	0	0	94
Lane Group Flow (vph)	238	190	63	13	137	0	186	330	0	89	830	88
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	15.7	15.7	15.7	15.7	15.7		8.0	34.7		6.7	33.4	33.4
Effective Green, g (s)	15.7	15.7	15.7	15.7	15.7		8.0	34.7		6.7	33.4	33.4
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23		0.12	0.50		0.10	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	260	423	359	230	406		204	926		171	900	765
v/s Ratio Prot		0.10			0.08		c0.11	0.18		0.05	c0.45	
v/s Ratio Perm	c0.21		0.04	0.01								0.06
v/c Ratio	0.92	0.45	0.17	0.06	0.34		0.91	0.36		0.52	0.92	0.11
Uniform Delay, d1	26.1	23.0	21.5	20.9	22.3		30.2	10.4		29.7	16.6	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	33.9	0.8	0.2	0.1	0.5		39.2	0.2		2.8	14.6	0.1
Delay (s)	60.0	23.7	21.7	21.0	22.8		69.5	10.7		32.5	31.2	9.8
Level of Service	E	C	C	C	C		E	B		C	C	A
Approach Delay (s)		35.2			22.7			31.7			27.8	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM 2000 Control Delay		30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio		0.92		
Actuated Cycle Length (s)		69.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization		83.0%	ICU Level of Service	E
Analysis Period (min)		15		
c Critical Lane Group				

13: Jamacha Blvd. & Sweetwater Springs Blvd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	13	2244	335	64	17	901	1115	42	9	1576	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1781	1583	1770	1863	1583	3433	3520		1770	1863	1583
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1781	1583	1770	1863	1583	3433	3520		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	14	2439	364	70	18	979	1212	46	10	1713	136
RTOR Reduction (vph)	0	0	21	0	0	15	0	2	0	0	0	62
Lane Group Flow (vph)	0	179	2418	364	70	3	979	1256	0	10	1713	74
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		16.0	64.0	19.0	19.0	21.4	48.0	98.2		2.4	52.6	52.6
Effective Green, g (s)		16.0	64.0	19.0	19.0	21.4	48.0	98.2		2.4	52.6	52.6
Actuated g/C Ratio		0.11	0.42	0.13	0.13	0.14	0.32	0.65		0.02	0.35	0.35
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		187	668	221	233	265	1086	2280		28	646	549
v/s Ratio Prot		0.10	c1.15	c0.21	0.04	0.00	0.29	0.36		0.01	c0.92	
v/s Ratio Perm			0.38			0.00						0.05
v/c Ratio		0.96	3.62	1.65	0.30	0.01	0.90	0.55		0.36	2.65	0.13
Uniform Delay, d1		67.5	43.8	66.3	60.3	56.0	49.5	14.6		73.8	49.5	33.9
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		52.9	1182.7	310.6	0.7	0.0	10.3	1.0		7.7	747.7	0.5
Delay (s)		120.3	1226.5	376.9	61.0	56.0	59.9	15.6		81.5	797.2	34.4
Level of Service		F	F	F	E	E	E	B		F	F	C
Approach Delay (s)		1150.9			315.2			35.0			737.6	
Approach LOS		F			F			C			F	

Intersection Summary				
HCM 2000 Control Delay	642.6	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	2.97			
Actuated Cycle Length (s)	151.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	250.5%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	317	1384	909	320	1246	69	741	65	246	120	133	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	345	1504	988	348	1354	75	805	71	267	130	145	321
RTOR Reduction (vph)	0	0	126	0	0	54	0	0	152	0	0	141
Lane Group Flow (vph)	345	1504	862	348	1354	21	805	71	115	130	145	180
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	26.0	49.0	8.0	25.0	25.0	23.0	33.1	33.1	6.9	17.0	17.0
Effective Green, g (s)	9.0	26.0	49.0	8.0	25.0	25.0	23.0	33.1	33.1	6.9	17.0	17.0
Actuated g/C Ratio	0.10	0.29	0.54	0.09	0.28	0.28	0.26	0.37	0.37	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1469	932	305	1412	439	877	685	582	263	351	299
v/s Ratio Prot	0.10	c0.30	c0.24	c0.10	0.27		0.23	0.04		0.04	0.08	
v/s Ratio Perm			0.31			0.01			0.07			c0.11
v/c Ratio	1.01	1.02	0.93	1.14	0.96	0.05	0.92	0.10	0.20	0.49	0.41	0.60
Uniform Delay, d1	40.5	32.0	18.8	41.0	32.0	23.8	32.6	18.7	19.4	39.9	32.1	33.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.1	29.7	14.5	95.3	15.1	0.0	14.2	0.3	0.8	1.5	3.6	8.7
Delay (s)	90.6	61.7	33.4	136.3	47.1	23.8	46.8	19.0	20.2	41.3	35.7	42.1
Level of Service	F	E	C	F	D	C	D	B	C	D	D	D
Approach Delay (s)		55.4			63.6			38.8			40.4	
Approach LOS		E			E			D			D	

Intersection Summary				
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.94			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	82.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

15: Steele Canyon Rd. & Willow Glen Dr.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	354	807	327	282	7	411	20	258	2	48	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.86			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3526		1770	1604			1811	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3526		1770	1604			1811	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	385	877	355	307	8	447	22	280	2	52	13
RTOR Reduction (vph)	0	0	215	0	2	0	0	203	0	0	11	0
Lane Group Flow (vph)	7	385	662	355	313	0	447	99	0	0	56	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.8	21.4	44.5	17.1	37.7		23.1	23.1			6.7	
Effective Green, g (s)	0.8	21.4	44.5	17.1	37.7		23.1	23.1			6.7	
Actuated g/C Ratio	0.01	0.25	0.53	0.20	0.45		0.27	0.27			0.08	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	16	472	910	359	1576		485	439			143	
v/s Ratio Prot	0.00	c0.21	0.20	c0.20	0.09		c0.25	0.06			c0.03	
v/s Ratio Perm			0.22									
v/c Ratio	0.44	0.82	0.73	0.99	0.20		0.92	0.22			0.39	
Uniform Delay, d1	41.5	29.6	15.3	33.5	14.1		29.7	23.7			36.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	18.0	10.4	2.9	44.0	0.1		25.4	1.2			1.8	
Delay (s)	59.5	40.0	18.2	77.5	14.2		55.1	24.9			38.6	
Level of Service	E	D	B	E	B		E	C			D	
Approach Delay (s)		25.0			47.8			42.9			38.6	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	81.5%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

16: Steele Canyon Rd. & Jamul Dr.

Timing Plan: PM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	347	508	257	324	1351	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	377	552	279	352	1468	424
RTOR Reduction (vph)	0	414	0	235	0	0
Lane Group Flow (vph)	377	138	279	117	1468	424
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.0	24.0	20.0	20.0	84.0	108.0
Effective Green, g (s)	24.0	24.0	20.0	20.0	84.0	108.0
Actuated g/C Ratio	0.17	0.17	0.14	0.14	0.60	0.77
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	271	266	226	1062	1437
v/s Ratio Prot	c0.21		c0.15		c0.83	0.23
v/s Ratio Perm		0.09		0.07		
v/c Ratio	1.24	0.51	1.05	0.52	1.38	0.30
Uniform Delay, d1	58.0	52.6	60.0	55.5	28.0	4.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	134.6	1.5	68.6	8.3	178.0	0.5
Delay (s)	192.6	54.1	128.6	63.8	206.0	5.3
Level of Service	F	D	F	E	F	A
Approach Delay (s)	110.3		92.4			161.0
Approach LOS	F		F			F

Intersection Summary				
HCM 2000 Control Delay	134.8	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.30			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	117.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	189	570	340	149	340	189
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	205	620	370	162	370	205
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	370				1400	370
vC1, stage 1 conf vol					370	
vC2, stage 2 conf vol					1030	
vCu, unblocked vol	370				1400	370
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	83				0	70
cM capacity (veh/h)	1189				269	676

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	205	620	370	162	575
Volume Left	205	0	0	0	370
Volume Right	0	0	0	162	205
cSH	1189	1700	1700	1700	343
Volume to Capacity	0.17	0.36	0.22	0.10	1.68
Queue Length 95th (ft)	16	0	0	0	878
Control Delay (s)	8.7	0.0	0.0	0.0	343.7
Lane LOS	A				F
Approach Delay (s)	2.2		0.0		343.7
Approach LOS					F

Intersection Summary			
Average Delay	103.3		
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	355	0	331	178	38	425
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	386	0	360	193	41	462
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			386		1299	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			386		1299	386
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			69		67	30
cM capacity (veh/h)			1173		124	662

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	386	360	193	503
Volume Left	0	360	0	41
Volume Right	0	0	0	462
cSH	1700	1173	1700	488
Volume to Capacity	0.23	0.31	0.11	1.03
Queue Length 95th (ft)	0	33	0	369
Control Delay (s)	0.0	9.4	0.0	78.7
Lane LOS		A		F
Approach Delay (s)	0.0	6.1		78.7
Approach LOS				F

Intersection Summary			
Average Delay	29.8		
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	502	97	104	54	16	476
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	546	105	113	59	17	517

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	651	172	535
Volume Left (vph)	546	0	17
Volume Right (vph)	0	59	517
Hadj (s)	0.20	-0.17	-0.54
Departure Headway (s)	6.1	6.4	5.6
Degree Utilization, x	1.0	0.31	0.83
Capacity (veh/h)	581	532	634
Control Delay (s)	92.4	12.3	30.3
Approach Delay (s)	92.4	12.3	30.3
Approach LOS	F	B	D

Intersection Summary			
Delay		57.8	
Level of Service		F	
Intersection Capacity Utilization		82.0%	ICU Level of Service E
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2455	149	69	1532	70	78
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2668	162	75	1665	76	85
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			2830		4565	2749
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2830		4565	2749
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			44		0	0
cM capacity (veh/h)			134		1	26

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	2830	1740	161
Volume Left	0	75	76
Volume Right	162	0	85
cSH	1700	134	1
Volume to Capacity	1.66	0.56	131.11
Queue Length 95th (ft)	0	69	Err
Control Delay (s)	0.0	61.2	Err
Lane LOS		F	F
Approach Delay (s)	0.0	61.2	Err
Approach LOS			F

Intersection Summary			
Average Delay		362.5	
Intersection Capacity Utilization		153.6%	ICU Level of Service H
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	186	1897	1553	674	730	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	0.95
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3378		1768	1504
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3378		1768	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	202	2062	1688	733	793	262
RTOR Reduction (vph)	0	0	33	0	1	79
Lane Group Flow (vph)	202	2062	2388	0	818	157
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.0	94.0	78.0		48.0	48.0
Effective Green, g (s)	12.0	94.0	78.0		48.0	48.0
Actuated g/C Ratio	0.08	0.63	0.52		0.32	0.32
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	141	2217	1756		565	481
v/s Ratio Prot	c0.11	0.58	c0.71		c0.46	
v/s Ratio Perm						0.10
v/c Ratio	1.43	0.93	1.36		1.45	0.33
Uniform Delay, d1	69.0	25.1	36.0		51.0	38.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	230.4	7.7	165.8		211.6	0.4
Delay (s)	299.4	32.8	201.8		262.6	39.1
Level of Service	F	C	F		F	D
Approach Delay (s)		56.6	201.8		212.6	
Approach LOS		E	F		F	

Intersection Summary			
HCM 2000 Control Delay	146.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	2152	347	563	1922	42	293	23	666	6	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		1.00	0.88	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		1780	2787	1681	1760	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		1780	2787	1681	1760	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	2339	377	612	2089	46	318	25	724	7	8	9
RTOR Reduction (vph)	0	0	190	0	0	17	0	0	239	0	0	0
Lane Group Flow (vph)	118	2339	187	612	2089	29	0	343	485	6	9	9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.7	62.3	62.3	27.4	80.0	80.0		16.1	43.5	3.9	3.9	3.9
Effective Green, g (s)	9.7	62.3	62.3	27.4	80.0	80.0		16.1	43.5	3.9	3.9	3.9
Actuated g/C Ratio	0.08	0.50	0.50	0.22	0.64	0.64		0.13	0.35	0.03	0.03	0.03
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	264	2520	784	748	3236	1007		227	1053	52	54	49
v/s Ratio Prot	0.03	c0.46		c0.18	0.41			c0.19	0.10	0.00	0.01	
v/s Ratio Perm			0.12			0.02			0.07			c0.01
v/c Ratio	0.45	0.93	0.24	0.82	0.65	0.03		1.51	0.46	0.12	0.17	0.18
Uniform Delay, d1	55.4	29.6	18.1	46.8	14.1	8.5		54.8	32.0	59.2	59.3	59.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	6.7	0.2	6.9	0.4	0.0		251.4	0.3	1.0	1.5	1.8
Delay (s)	56.6	36.3	18.3	53.7	14.5	8.5		306.2	32.3	60.2	60.8	61.2
Level of Service	E	D	B	D	B	A		F	C	E	E	E
Approach Delay (s)		34.7			23.2			120.3			60.8	
Approach LOS		C			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	125.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	2179	911	510	1678	77	1064	72	566	86	40	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	2787	3433	5085	1583	3433	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	2368	990	554	1824	84	1157	78	615	93	43	71
RTOR Reduction (vph)	0	0	160	0	0	32	0	0	33	0	0	65
Lane Group Flow (vph)	91	2368	830	554	1824	52	1157	78	582	93	43	6
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.3	67.0	99.0	21.0	75.7	75.7	32.0	32.0	53.0	12.0	12.0	12.0
Effective Green, g (s)	12.3	67.0	99.0	21.0	75.7	75.7	32.0	32.0	53.0	12.0	12.0	12.0
Actuated g/C Ratio	0.08	0.45	0.67	0.14	0.51	0.51	0.22	0.22	0.36	0.08	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	147	2301	1864	487	2600	809	742	402	609	143	151	128
v/s Ratio Prot	0.05	c0.47	0.10	c0.16	0.36		c0.34	0.04	0.14	c0.05	0.02	
v/s Ratio Perm			0.20			0.03			0.23			0.00
v/c Ratio	0.62	1.03	0.45	1.14	0.70	0.06	1.56	0.19	0.96	0.65	0.28	0.04
Uniform Delay, d1	65.6	40.5	11.6	63.5	27.5	18.3	58.0	47.5	46.3	66.0	64.0	62.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	26.7	0.2	84.3	0.9	0.0	258.3	0.2	25.5	10.1	1.0	0.1
Delay (s)	73.1	67.2	11.7	147.8	28.4	18.3	316.3	47.7	71.9	76.1	65.0	62.9
Level of Service	E	E	B	F	C	B	F	D	E	E	E	E
Approach Delay (s)		51.4			54.9			223.7			69.2	
Approach LOS		D			D			F			E	

Intersection Summary				
HCM 2000 Control Delay	93.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.14			
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	103.7%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	951	954	4	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	1034	1037	4	1	7
RTOR Reduction (vph)	0	0	0	1	0	6
Lane Group Flow (vph)	4	1034	1037	3	1	1
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	0.6	39.9	35.3	35.3	5.8	6.4
Effective Green, g (s)	0.6	39.9	35.3	35.3	5.8	6.4
Actuated g/C Ratio	0.01	0.74	0.66	0.66	0.11	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	38	1384	1224	1040	191	306
v/s Ratio Prot	0.00	c0.56	c0.56		c0.00	0.00
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.11	0.75	0.85	0.00	0.01	0.00
Uniform Delay, d1	26.3	4.0	7.1	3.2	21.4	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	2.2	5.6	0.0	0.0	0.0
Delay (s)	27.5	6.2	12.7	3.2	21.4	20.8
Level of Service	C	A	B	A	C	C
Approach Delay (s)		6.3	12.7		20.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

5: Steele Canyon Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	908	0	3	904	181	2	3	11	222	3	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.90			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3451			1675			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (perm)	1770	3539		1770	3451			1675			1775	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	987	0	3	983	197	2	3	12	241	3	85
RTOR Reduction (vph)	0	0	0	0	17	0	0	11	0	0	0	68
Lane Group Flow (vph)	73	987	0	3	1163	0	0	6	0	0	244	17
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	5.1	40.2		0.7	35.8			6.1			15.7	15.7
Effective Green, g (s)	5.1	40.2		0.7	35.8			6.1			15.7	15.7
Actuated g/C Ratio	0.06	0.51		0.01	0.45			0.08			0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	114	1807		15	1569			129			354	315
v/s Ratio Prot	c0.04	0.28		0.00	c0.34			c0.00			c0.14	
v/s Ratio Perm												0.01
v/c Ratio	0.64	0.55		0.20	0.74			0.05			0.69	0.05
Uniform Delay, d1	35.9	13.1		38.7	17.6			33.6			29.2	25.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	11.6	0.3		6.5	1.9			0.1			5.5	0.1
Delay (s)	47.5	13.4		45.2	19.6			33.8			34.7	25.6
Level of Service	D	B		D	B			C			C	C
Approach Delay (s)		15.8			19.6			33.8			32.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

6: Indian Springs Dr./Lyons Valley Rd. & SR 94

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	1041	7	13	901	56	6	0	14	6	0	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99			0.91			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1770	1861		1770	1846			1665			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.91			0.74	1.00
Satd. Flow (perm)	1770	1861		1770	1846			1547			1384	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	209	1132	8	14	979	61	7	0	15	7	0	207
RTOR Reduction (vph)	0	0	0	0	2	0	0	20	0	0	0	189
Lane Group Flow (vph)	209	1140	0	14	1038	0	0	2	0	0	7	18
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		6
Actuated Green, G (s)	10.0	62.9		0.7	53.6			7.4			7.4	7.4
Effective Green, g (s)	10.0	62.9		0.7	53.6			7.4			7.4	7.4
Actuated g/C Ratio	0.12	0.76		0.01	0.65			0.09			0.09	0.09
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	213	1410		14	1192			137			123	141
v/s Ratio Prot	c0.12	0.61		0.01	c0.56							
v/s Ratio Perm								0.00			0.01	c0.01
v/c Ratio	0.98	0.81		1.00	0.87			0.01			0.06	0.13
Uniform Delay, d1	36.4	6.3		41.1	11.9			34.5			34.6	34.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	56.0	3.5		240.5	7.2			0.0			0.2	0.4
Delay (s)	92.4	9.8		281.7	19.1			34.5			34.8	35.3
Level of Service	F	A		F	B			C			C	D
Approach Delay (s)		22.6			22.6			34.5			35.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	683	609	122	724	66	371	186	233	64	245	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1748			1830	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.64			0.78	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1140			1444	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	742	662	133	787	72	403	202	253	70	266	21
RTOR Reduction (vph)	0	0	86	0	0	31	0	14	0	0	2	0
Lane Group Flow (vph)	20	742	576	133	787	41	0	844	0	0	355	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.6	38.4	38.4	6.0	42.8	42.8		56.0			56.0	
Effective Green, g (s)	1.6	38.4	38.4	6.0	42.8	42.8		56.0			56.0	
Actuated g/C Ratio	0.01	0.34	0.34	0.05	0.38	0.38		0.50			0.50	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	25	636	540	94	709	602		567			719	
v/s Ratio Prot	0.01	0.40		c0.08	c0.42							
v/s Ratio Perm			0.36			0.03		c0.74			0.25	
v/c Ratio	0.80	1.17	1.07	1.41	1.11	0.07		1.49			0.49	
Uniform Delay, d1	55.2	37.0	37.0	53.2	34.8	22.1		28.2			18.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	95.2	91.3	58.0	237.9	68.1	0.0		229.1			0.5	
Delay (s)	150.4	128.3	95.0	291.1	102.9	22.2		257.3			19.3	
Level of Service	F	F	F	F	F	C		F			B	
Approach Delay (s)		113.1			122.3			257.3			19.3	
Approach LOS		F			F			F			B	

Intersection Summary				
HCM 2000 Control Delay	140.5	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.36			
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	118.2%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	16	8	757	965	19
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	17	9	823	1049	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1899	1059	1070			
vC1, stage 1 conf vol	1059					
vC2, stage 2 conf vol	840					
vCu, unblocked vol	1899	1059	1070			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	94	99			
cM capacity (veh/h)	264	273	652			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	38	9	823	1070
Volume Left	21	9	0	0
Volume Right	17	0	0	21
cSH	268	652	1700	1700
Volume to Capacity	0.14	0.01	0.48	0.63
Queue Length 95th (ft)	12	1	0	0
Control Delay (s)	20.7	10.6	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	20.7	0.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

9: SR 94 & Melody Rd./Peacefull Valley Ranch Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	95	6	0	24	103	752	8	13	720	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1637			1647		1770	1860		1770	1851	
Flt Permitted		0.94			0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1551			1582		1770	1860		1770	1851	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	0	103	7	0	26	112	817	9	14	783	34
RTOR Reduction (vph)	0	103	0	0	30	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	18	0	0	3	0	112	826	0	14	815	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		4.0			4.0		3.2	25.5		0.7	23.0	
Effective Green, g (s)		4.0			4.0		3.2	25.5		0.7	23.0	
Actuated g/C Ratio		0.09			0.09		0.08	0.60		0.02	0.55	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		147			149		134	1123		29	1008	
v/s Ratio Prot							c0.06	c0.44		0.01	0.44	
v/s Ratio Perm		c0.01			0.00							
v/c Ratio		0.12			0.02		0.84	0.74		0.48	0.81	
Uniform Delay, d1		17.5			17.3		19.2	5.9		20.6	7.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			0.1		34.1	2.5		12.1	4.8	
Delay (s)		17.9			17.4		53.3	8.5		32.7	12.7	
Level of Service		B			B		D	A		C	B	
Approach Delay (s)		17.9			17.4			13.8			13.0	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	63.9%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

10: SR 94 & Reservation Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	597	163	136	229	422	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.93	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	1583	1770	1863	1725	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	1583	1770	1863	1725	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	649	177	148	249	459	557
RTOR Reduction (vph)	0	125	0	0	89	0
Lane Group Flow (vph)	649	52	148	249	927	0
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	13.5	13.5	4.0	24.1	16.1	
Effective Green, g (s)	13.5	13.5	4.0	24.1	16.1	
Actuated g/C Ratio	0.30	0.30	0.09	0.53	0.35	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1016	468	155	984	609	
v/s Ratio Prot			c0.08	0.13	c0.54	
v/s Ratio Perm	c0.19	0.03				
v/c Ratio	0.64	0.11	0.95	0.25	1.52	
Uniform Delay, d1	13.9	11.7	20.7	5.9	14.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.1	58.4	0.1	243.6	
Delay (s)	15.3	11.8	79.1	6.0	258.3	
Level of Service	B	B	E	A	F	
Approach Delay (s)	14.5			33.2	258.3	
Approach LOS	B			C	F	

Intersection Summary				
HCM 2000 Control Delay	128.5	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.10			
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	88.1%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	135	45	409	125	49	578
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	147	49	445	136	53	628
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			966			
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	1247	512			580	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1200	326			407	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	10	92			95	
cM capacity (veh/h)	163	602			969	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	196	580	53	628
Volume Left	147	0	53	0
Volume Right	49	136	0	0
cSH	199	1700	969	1700
Volume to Capacity	0.98	0.34	0.05	0.37
Queue Length 95th (ft)	209	0	4	0
Control Delay (s)	109.0	0.0	8.9	0.0
Lane LOS	F		A	
Approach Delay (s)	109.0	0.0	0.7	
Approach LOS	F			

Intersection Summary			
Average Delay	15.0		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	113	163	14	122	39	134	336	13	49	499	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1796		1770	1852		1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.68	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1189	1863	1583	1263	1796		1770	1852		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	123	177	15	133	42	146	365	14	53	542	230
RTOR Reduction (vph)	0	0	132	0	19	0	0	2	0	0	0	134
Lane Group Flow (vph)	201	123	45	15	156	0	146	377	0	53	542	96
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	13.3	13.3	13.3	13.3	13.3		5.1	23.7		3.1	21.7	21.7
Effective Green, g (s)	13.3	13.3	13.3	13.3	13.3		5.1	23.7		3.1	21.7	21.7
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26		0.10	0.45		0.06	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	303	475	404	322	458		173	842		105	775	659
v/s Ratio Prot		0.07			0.09		c0.08	0.20		0.03	c0.29	
v/s Ratio Perm	c0.17		0.03	0.01								0.06
v/c Ratio	0.66	0.26	0.11	0.05	0.34		0.84	0.45		0.50	0.70	0.15
Uniform Delay, d1	17.4	15.5	14.9	14.6	15.8		23.1	9.7		23.8	12.5	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.4	0.3	0.1	0.1	0.4		29.5	0.4		3.8	2.8	0.1
Delay (s)	22.8	15.8	15.0	14.7	16.3		52.6	10.1		27.5	15.3	9.5
Level of Service	C	B	B	B	B		D	B		C	B	A
Approach Delay (s)		18.3			16.1			21.9			14.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

SR 94 Improvement Project — Horizon Year (2035) with Project Alt 1-2 Saturday

13: Jamacha Blvd. & Sweetwater Springs Blvd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	2	1307	29	5	1	681	821	7	1	1565	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	0.97	0.95		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1775	1583	1770	1863	1583	3433	3534		1770	1863	1583
Flt Permitted		0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1775	1583	1770	1863	1583	3433	3534		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	2	1421	32	5	1	740	892	8	1	1701	139
RTOR Reduction (vph)	0	0	96	0	0	1	0	0	0	0	0	47
Lane Group Flow (vph)	0	137	1325	32	5	0	740	900	0	1	1701	92
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		14.2	48.3	5.3	5.3	6.1	34.1	104.9		0.8	71.6	71.6
Effective Green, g (s)		14.2	48.3	5.3	5.3	6.1	34.1	104.9		0.8	71.6	71.6
Actuated g/C Ratio		0.10	0.34	0.04	0.04	0.04	0.24	0.74		0.01	0.51	0.51
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		178	541	66	69	113	829	2625		10	944	802
v/s Ratio Prot		0.08	c0.59	c0.02	0.00	0.00	0.22	0.25		0.00	c0.91	
v/s Ratio Perm			0.25			0.00						0.06
v/c Ratio		0.77	2.45	0.48	0.07	0.00	0.89	0.34		0.10	1.80	0.11
Uniform Delay, d1		61.9	46.4	66.6	65.6	64.6	51.8	6.3		69.8	34.8	18.2
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		18.0	657.7	5.5	0.4	0.0	11.9	0.4		4.4	365.1	0.3
Delay (s)		79.9	704.1	72.1	66.0	64.6	63.7	6.6		74.2	399.9	18.5
Level of Service		E	F	E	E	E	E	A		E	F	B
Approach Delay (s)		649.2			71.1			32.4			370.9	
Approach LOS		F			E			C			F	

Intersection Summary				
HCM 2000 Control Delay	344.7	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.99			
Actuated Cycle Length (s)	141.2	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	176.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

SR 94 Improvement Project — Horizon Year (2035) with Project Alt 1-2 Saturday

14: Willow Glen Dr. & Jamacha Rd.

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1038	726	182	1031	69	794	78	150	127	124	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1128	789	198	1121	75	863	85	163	138	135	311
RTOR Reduction (vph)	0	0	177	0	0	58	0	0	100	0	0	139
Lane Group Flow (vph)	337	1128	612	198	1121	17	863	85	63	138	135	172
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	20.0	41.0	6.0	18.0	18.0	21.0	31.1	31.1	6.9	17.0	17.0
Effective Green, g (s)	8.0	20.0	41.0	6.0	18.0	18.0	21.0	31.1	31.1	6.9	17.0	17.0
Actuated g/C Ratio	0.10	0.25	0.51	0.08	0.22	0.22	0.26	0.39	0.39	0.09	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1271	890	257	1144	356	901	724	615	296	395	336
v/s Ratio Prot	c0.10	c0.22	0.18	0.06	0.22		c0.25	0.05		0.04	0.07	
v/s Ratio Perm			0.21			0.01			0.04			c0.11
v/c Ratio	0.98	0.89	0.69	0.77	0.98	0.05	0.96	0.12	0.10	0.47	0.34	0.51
Uniform Delay, d1	35.9	28.9	14.7	36.3	30.8	24.3	29.1	15.7	15.6	34.8	26.7	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.6	7.8	2.2	13.3	21.6	0.1	20.2	0.3	0.3	1.2	2.3	5.5
Delay (s)	79.5	36.7	16.9	49.6	52.4	24.3	49.3	16.0	15.9	36.0	29.1	33.3
Level of Service	E	D	B	D	D	C	D	B	B	D	C	C
Approach Delay (s)		36.2			50.5			41.8			32.9	
Approach LOS		D			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	71.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	390	531	209	392	6	381	6	247	4	11	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	3531		1770	1590			1743	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1583	1770	3531		1770	1590			1743	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	424	577	227	426	7	414	7	268	4	12	12
RTOR Reduction (vph)	0	0	227	0	1	0	0	188	0	0	12	0
Lane Group Flow (vph)	7	424	350	227	432	0	414	87	0	0	16	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4									
Actuated Green, G (s)	0.7	24.2	47.5	12.1	35.6		23.3	23.3			2.7	
Effective Green, g (s)	0.7	24.2	47.5	12.1	35.6		23.3	23.3			2.7	
Actuated g/C Ratio	0.01	0.31	0.61	0.15	0.45		0.30	0.30			0.03	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	15	575	1041	273	1605		526	473			60	
v/s Ratio Prot	0.00	c0.23	0.10	c0.13	0.12		c0.23	0.05			c0.01	
v/s Ratio Perm			0.12									
v/c Ratio	0.47	0.74	0.34	0.83	0.27		0.79	0.18			0.27	
Uniform Delay, d1	38.6	24.2	7.6	32.1	13.3		25.2	20.4			36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	21.2	4.9	0.2	19.0	0.1		11.3	0.9			2.5	
Delay (s)	59.8	29.1	7.8	51.1	13.4		36.5	21.3			39.3	
Level of Service	E	C	A	D	B		D	C			D	
Approach Delay (s)		17.1			26.3			30.5			39.3	
Approach LOS		B			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	69.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	263	490	211	210	650	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	286	533	229	228	707	324
RTOR Reduction (vph)	0	426	0	177	0	0
Lane Group Flow (vph)	286	107	229	51	707	324
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	14.8	14.8	16.5	16.5	30.6	51.1
Effective Green, g (s)	14.8	14.8	16.5	16.5	30.6	51.1
Actuated g/C Ratio	0.20	0.20	0.22	0.22	0.41	0.69
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	354	317	415	353	732	1288
v/s Ratio Prot	c0.16		c0.12		c0.40	0.17
v/s Ratio Perm		0.07		0.03		
v/c Ratio	0.81	0.34	0.55	0.14	0.97	0.25
Uniform Delay, d1	28.2	25.3	25.4	23.0	21.1	4.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	0.6	5.2	0.9	24.9	0.5
Delay (s)	40.9	26.0	30.6	23.9	46.0	4.7
Level of Service	D	C	C	C	D	A
Approach Delay (s)	31.2		27.3			33.0
Approach LOS	C		C			C

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	113	240	207	139	177	215
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	123	261	225	151	192	234
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	225				732	225
vC1, stage 1 conf vol					225	
vC2, stage 2 conf vol					507	
vCu, unblocked vol	225				732	225
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	91				63	71
cM capacity (veh/h)	1344				515	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	123	261	225	151	426
Volume Left	123	0	0	0	192
Volume Right	0	0	0	151	234
cSH	1344	1700	1700	1700	645
Volume to Capacity	0.09	0.15	0.13	0.09	0.66
Queue Length 95th (ft)	8	0	0	0	124
Control Delay (s)	7.9	0.0	0.0	0.0	20.8
Lane LOS	A				C
Approach Delay (s)	2.5		0.0		20.8
Approach LOS					C

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	171	0	235	183	28	234
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	186	0	255	199	30	254
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			186		896	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			186		896	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			82		88	70
cM capacity (veh/h)			1389		254	856

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	186	255	199	285
Volume Left	0	255	0	30
Volume Right	0	0	0	254
cSH	1700	1389	1700	683
Volume to Capacity	0.11	0.18	0.12	0.42
Queue Length 95th (ft)	0	17	0	52
Control Delay (s)	0.0	8.2	0.0	14.0
Lane LOS		A		B
Approach Delay (s)	0.0	4.6		14.0
Approach LOS				B

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Yield	Stop		Yield	
Volume (vph)	626	86	100	61	34	553
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	680	93	109	66	37	601

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	774	175	638
Volume Left (vph)	680	0	37
Volume Right (vph)	0	66	601
Hadj (s)	0.21	-0.19	-0.52
Departure Headway (s)	6.5	6.8	5.7
Degree Utilization, x	1.0	0.33	1.0
Capacity (veh/h)	568	525	638
Control Delay (s)	208.9	13.2	59.8
Approach Delay (s)	208.9	13.2	59.8
Approach LOS	F	B	F

Intersection Summary			
Delay		127.4	
Level of Service		F	
Intersection Capacity Utilization		94.3%	ICU Level of Service F
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1140	127	17	1006	13	53
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1239	138	18	1093	14	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1377		2439	1308
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1377		2439	1308
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		58	70
cM capacity (veh/h)			498		33	195

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1377	1112	72
Volume Left	0	18	14
Volume Right	138	0	58
cSH	1700	498	100
Volume to Capacity	0.81	0.04	0.72
Queue Length 95th (ft)	0	3	93
Control Delay (s)	0.0	1.5	102.9
Lane LOS		A	F
Approach Delay (s)	0.0	1.5	102.9
Approach LOS			F

Intersection Summary			
Average Delay		3.5	
Intersection Capacity Utilization		78.4%	ICU Level of Service D
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	2	66	2	4	47	108	461	24	55	162	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85			0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1591			1635		3433	1849		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1591			1635		3433	1849		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	2	72	2	4	51	117	501	26	60	176	340
RTOR Reduction (vph)	0	63	0	0	47	0	0	2	0	0	0	203
Lane Group Flow (vph)	168	11	0	0	10	0	117	525	0	60	176	137
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.3	6.3			3.4		3.2	20.6		2.1	19.5	19.5
Effective Green, g (s)	6.3	6.3			3.4		3.2	20.6		2.1	19.5	19.5
Actuated g/C Ratio	0.13	0.13			0.07		0.07	0.43		0.04	0.40	0.40
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	446	207			114		226	786		76	750	637
v/s Ratio Prot	c0.05	0.01			c0.01		c0.03	c0.28		0.03	0.09	
v/s Ratio Perm												0.09
v/c Ratio	0.38	0.05			0.08		0.52	0.67		0.79	0.23	0.22
Uniform Delay, d1	19.3	18.4			21.0		21.9	11.2		22.9	9.5	9.4
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1			0.3		2.0	2.2		40.6	0.2	0.2
Delay (s)	19.8	18.6			21.4		23.9	13.3		63.5	9.7	9.6
Level of Service	B	B			C		C	B		E	A	A
Approach Delay (s)		19.4			21.4			15.2			15.3	
Approach LOS		B			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	50.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	593	230	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	645	250	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	895	250	250			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	895	250	250			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	311	789	1316			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	645	250
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1316	1700
Volume to Capacity	0.00	0.00	0.15
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	528	8	174	10	7	22	169	222	0	13	539	485
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.92		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1596			1701		3433	1863		1770	1863	1583
Flt Permitted	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1596			1701		3433	1863		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	574	9	189	11	8	24	184	241	0	14	586	527
RTOR Reduction (vph)	0	143	0	0	23	0	0	0	0	0	0	340
Lane Group Flow (vph)	574	55	0	0	20	0	184	241	0	14	586	187
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	13.5	13.5			2.5		4.1	23.2		0.7	19.8	19.8
Effective Green, g (s)	13.5	13.5			2.5		4.1	23.2		0.7	19.8	19.8
Actuated g/C Ratio	0.24	0.24			0.04		0.07	0.42		0.01	0.35	0.35
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	829	385			76		251	773		22	659	560
v/s Ratio Prot	c0.17	0.03			c0.01		c0.05	c0.13		0.01	c0.31	
v/s Ratio Perm												0.12
v/c Ratio	0.69	0.14			0.26		0.73	0.31		0.64	0.89	0.33
Uniform Delay, d1	19.3	16.7			25.8		25.4	11.0		27.5	17.0	13.2
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.5	0.2			1.9		10.5	0.2		47.5	13.9	0.4
Delay (s)	21.8	16.8			27.7		35.9	11.2		75.0	30.9	13.6
Level of Service	C	B			C		D	B		E	C	B
Approach Delay (s)		20.5			27.7			21.9			23.3	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	64.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	391	723	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	425	786	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1211	786	786			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1211	786	786			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	201	392	833			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	425	786
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	833	1700
Volume to Capacity	0.00	0.00	0.46
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	348	18	117	2	5	50	130	216	3	59	466	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.87			0.88		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1621			1637		3433	1859		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1621			1637		3433	1859		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	20	127	2	5	54	141	235	3	64	507	423
RTOR Reduction (vph)	0	100	0	0	50	0	0	1	0	0	0	274
Lane Group Flow (vph)	378	47	0	0	11	0	141	237	0	64	507	149
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	11.2	11.2			3.6		3.0	19.2		2.1	18.3	18.3
Effective Green, g (s)	11.2	11.2			3.6		3.0	19.2		2.1	18.3	18.3
Actuated g/C Ratio	0.21	0.21			0.07		0.06	0.37		0.04	0.35	0.35
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	737	348			113		197	685		71	654	556
v/s Ratio Prot	c0.11	0.03			c0.01		c0.04	0.13		0.04	c0.27	
v/s Ratio Perm												0.09
v/c Ratio	0.51	0.14			0.09		0.72	0.35		0.90	0.78	0.27
Uniform Delay, d1	18.0	16.5			22.7		24.1	11.9		24.9	15.1	12.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2			0.4		11.7	0.3		73.4	5.7	0.3
Delay (s)	18.6	16.7			23.1		35.8	12.2		98.3	20.8	12.4
Level of Service	B	B			C		D	B		F	C	B
Approach Delay (s)		18.1			23.1			21.0			22.2	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	54.8%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	349	585	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	379	636	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1015	636	636			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1015	636	636			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	264	478	948			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	379	636
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	948	1700
Volume to Capacity	0.00	0.00	0.37
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	519	8	178	0	7	24	158	253	0	13	294	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1596			1670		3433	1863		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1596			1670		3433	1863		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	564	9	193	0	8	26	172	275	0	14	320	533
RTOR Reduction (vph)	0	148	0	0	20	0	0	0	0	0	0	408
Lane Group Flow (vph)	564	54	0	0	14	0	172	275	0	14	320	125
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.0	16.0			16.0		4.0	16.0		4.0	16.0	16.0
Effective Green, g (s)	16.0	16.0			16.0		4.0	16.0		4.0	16.0	16.0
Actuated g/C Ratio	0.24	0.24			0.24		0.06	0.24		0.06	0.24	0.24
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	807	375			392		201	438		104	438	372
v/s Ratio Prot	c0.16	0.03			c0.01		c0.05	0.15		0.01	c0.17	
v/s Ratio Perm												0.08
v/c Ratio	0.70	0.15			0.04		0.86	0.63		0.13	0.73	0.34
Uniform Delay, d1	23.8	20.6			20.1		31.7	23.3		30.4	24.0	21.6
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	0.8			0.2		34.6	6.7		2.7	10.3	2.4
Delay (s)	28.8	21.4			20.2		66.4	30.0		33.0	34.3	24.0
Level of Service	C	C			C		E	C		C	C	C
Approach Delay (s)		26.8			20.2			44.0			28.0	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	51.5%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	411	472	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	447	513	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	960	513	513			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	513	513			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	285	561	1052			

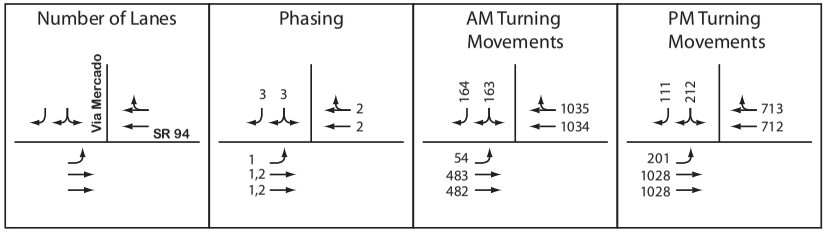
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	447	513
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1052	1700
Volume to Capacity	0.00	0.00	0.30
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

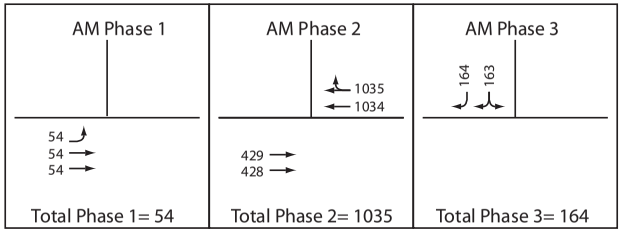
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

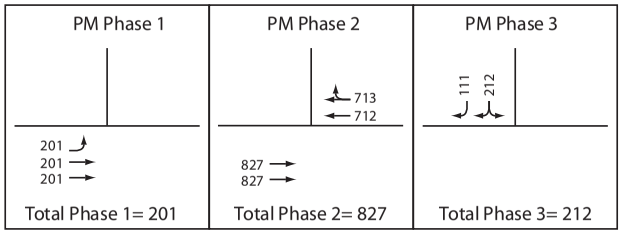
APPENDIX F

- ILV Analysis Worksheets

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Existing Baseline Weekday







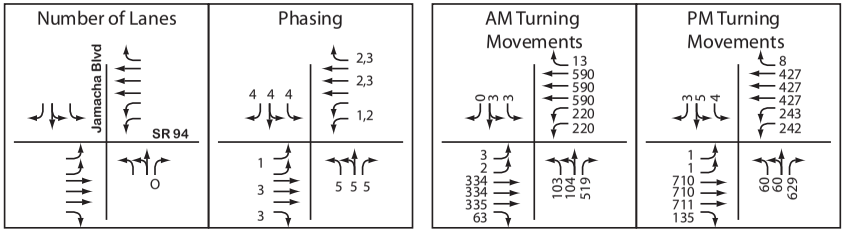
AM TOTAL= 1253

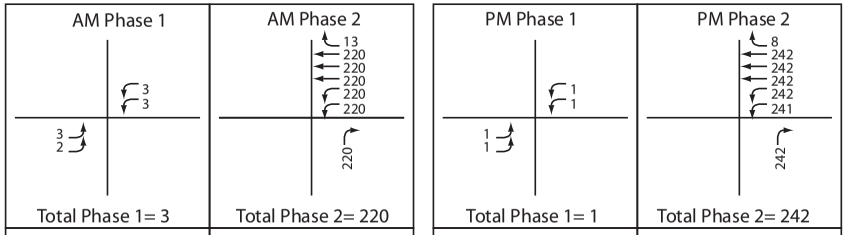
AM LOS= Approaching Capacity

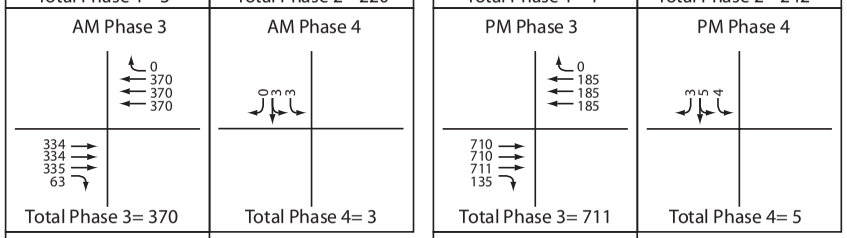
PM TOTAL= 1240

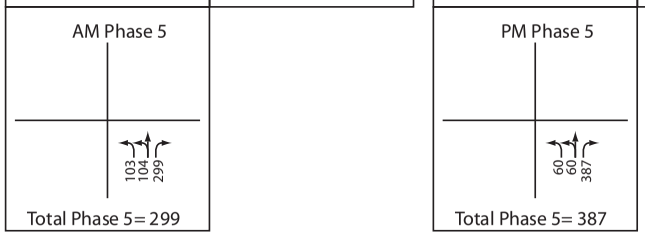
PM LOS= Approaching Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Existing Baseline Weekday





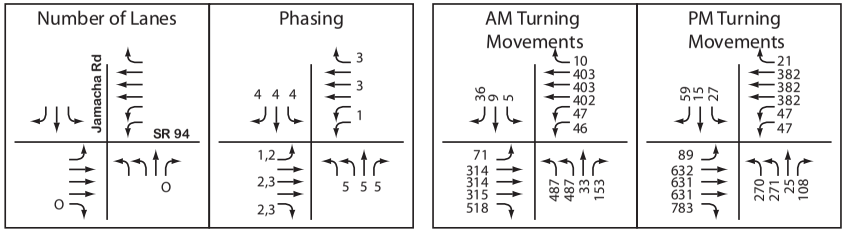


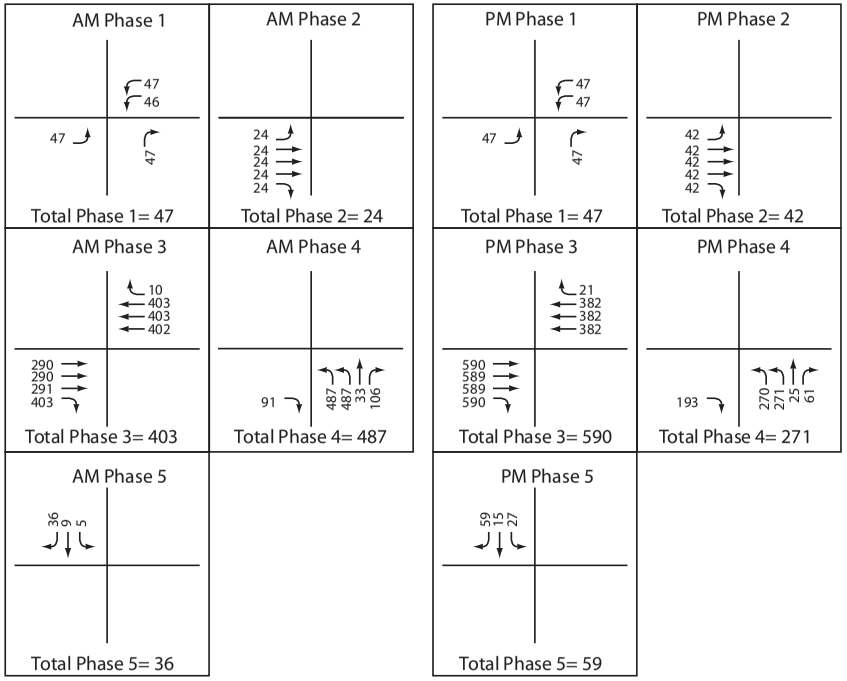


AM TOTAL= 895
AM LOS= Below Capacity

PM TOTAL= 1346
PM LOS= Approaching Capacity

Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Existing Baseline Weekday

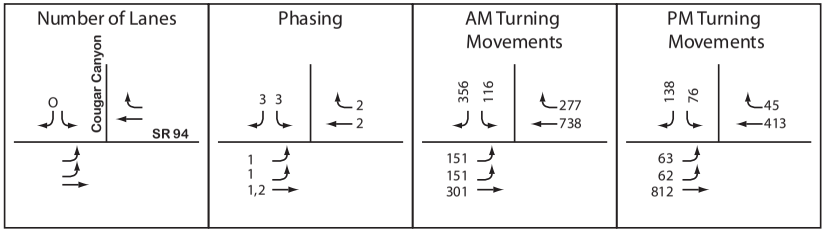


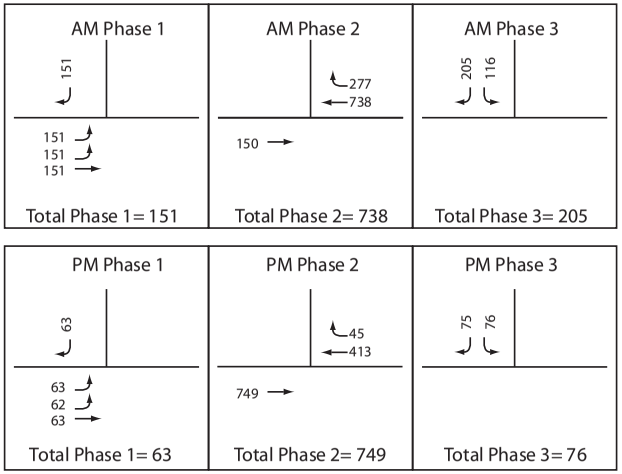


AM TOTAL= 997
AM LOS= Below Capacity

PM TOTAL= 1009
PM LOS= Below Capacity

Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Existing Baseline Weekday

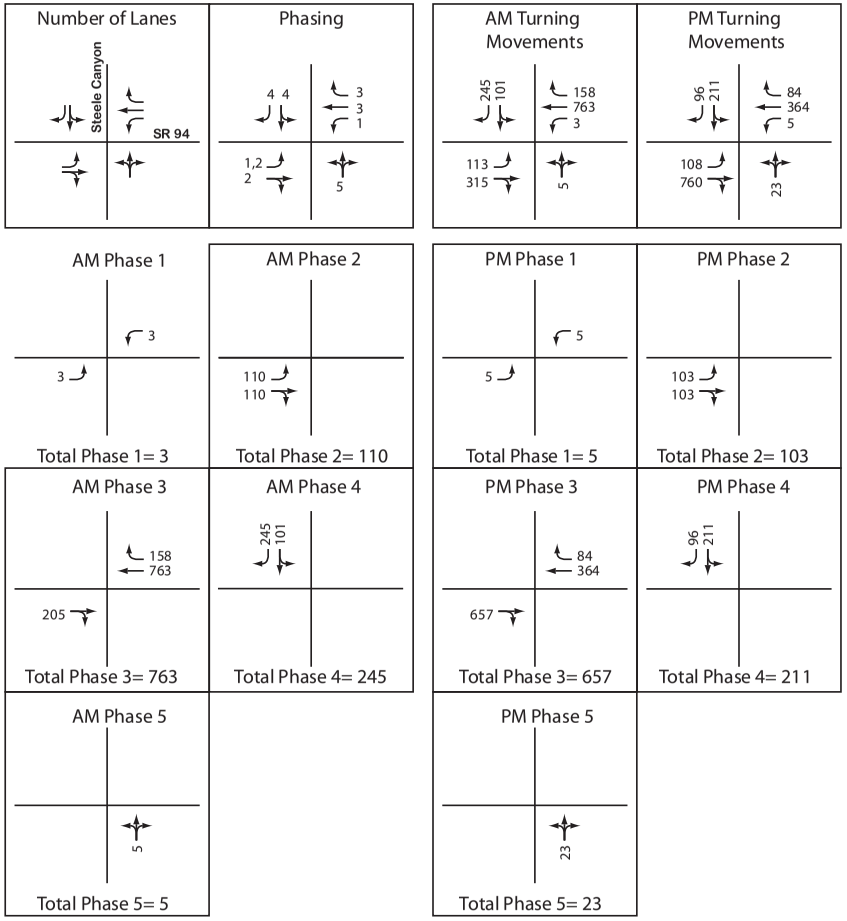




AM TOTAL= 1094
AM LOS= Below Capacity

PM TOTAL= 888
PM LOS= Below Capacity

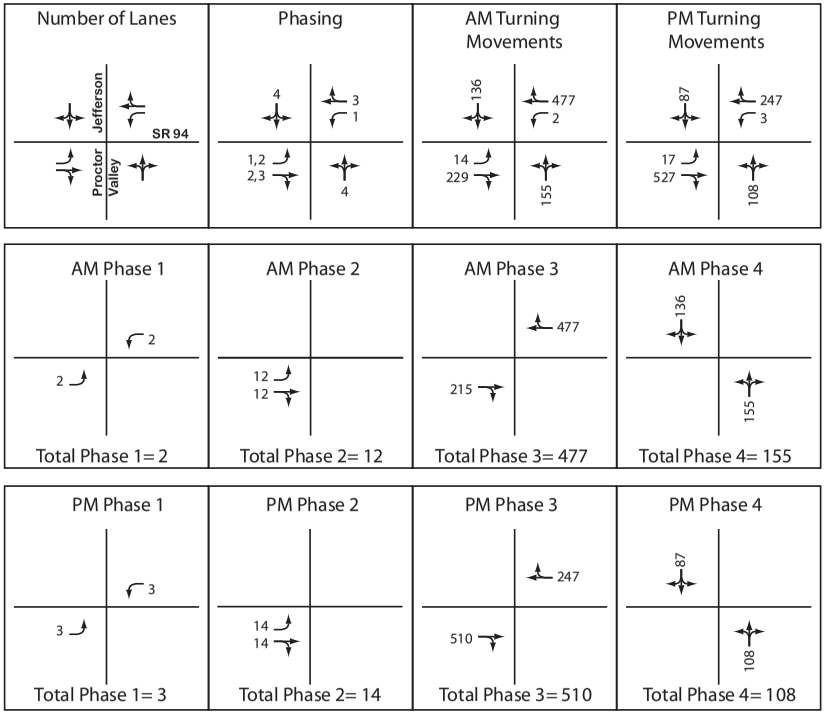
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Existing Baseline Weekday



AM TOTAL= 1126
AM LOS= Below Capacity

PM TOTAL= 999
PM LOS= Below Capacity

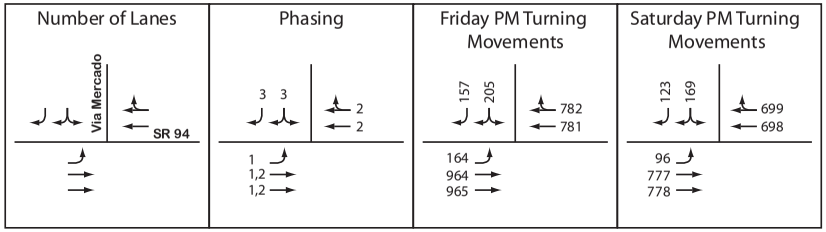
Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Existing Baseline Weekday

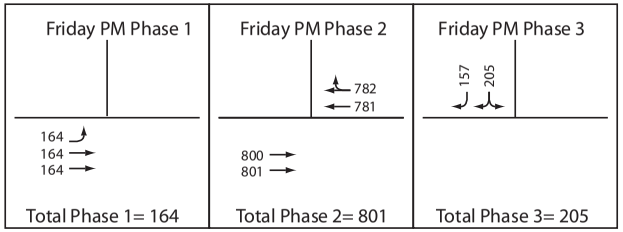


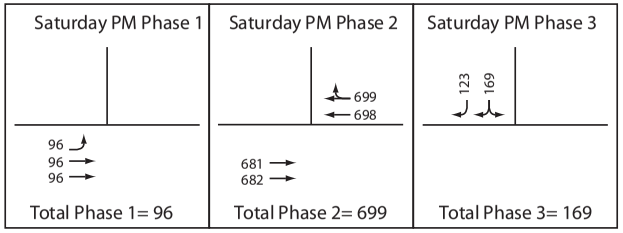
AM TOTAL= 646
AM LOS= Below Capacity

PM TOTAL= 635
PM LOS= Below Capacity

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Existing Baseline Friday/Saturday







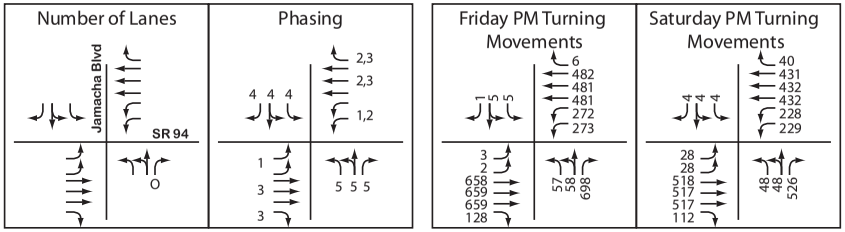
Friday PM TOTAL= 1170

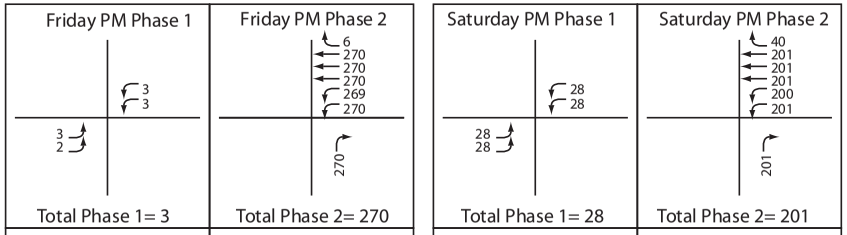
Friday PM LOS= Below Capacity

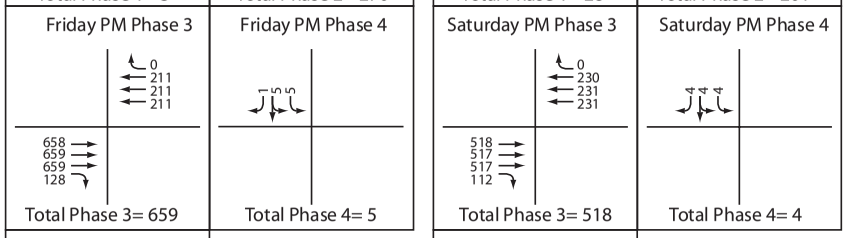
Saturday PM TOTAL= 964

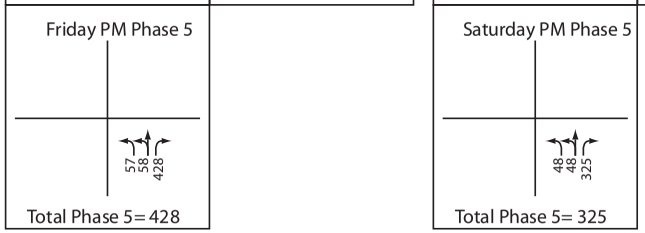
Saturday PM LOS= Below Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Existing Baseline Friday/Saturday





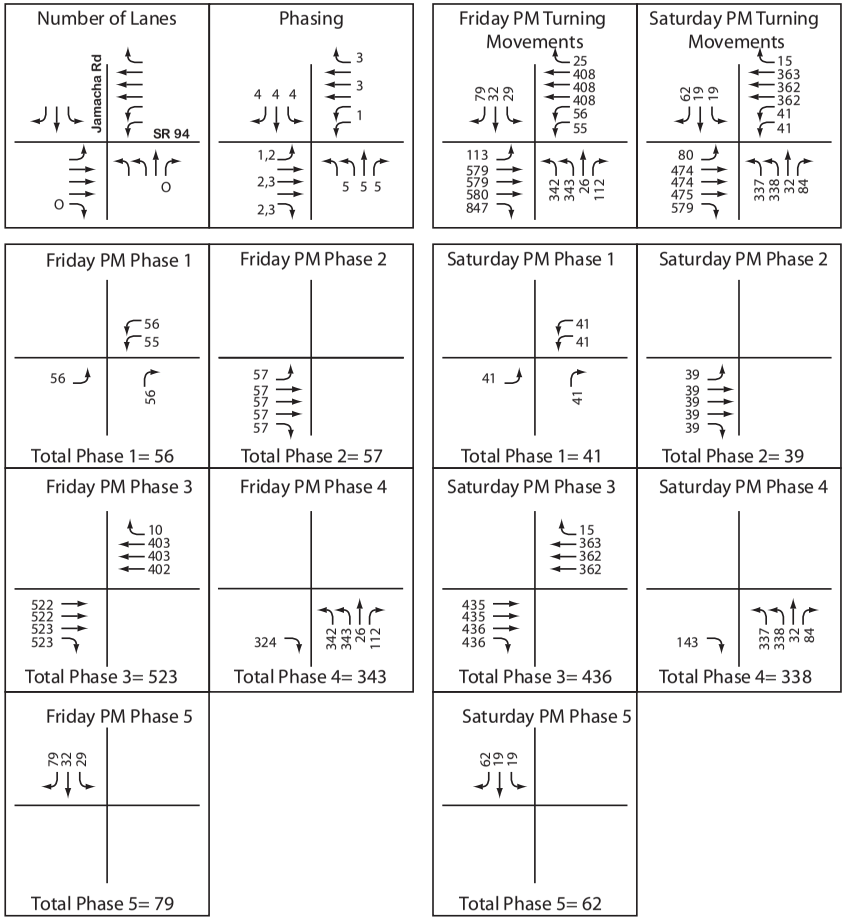




Friday PM TOTAL= 1365
Friday PM LOS= Approaching Capacity

Saturday PM TOTAL= 1076
Saturday PM LOS= Below Capacity

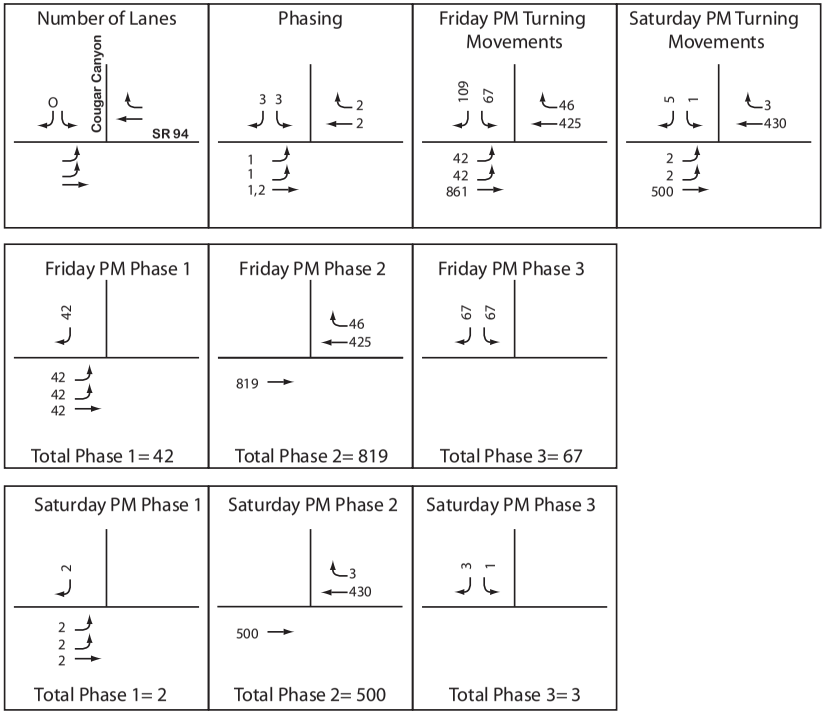
Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Existing Baseline Friday/Saturday



Friday PM TOTAL= 1058
Friday PM LOS= Below Capacity

Saturday PM TOTAL= 916
Saturday PM LOS= Below Capacity

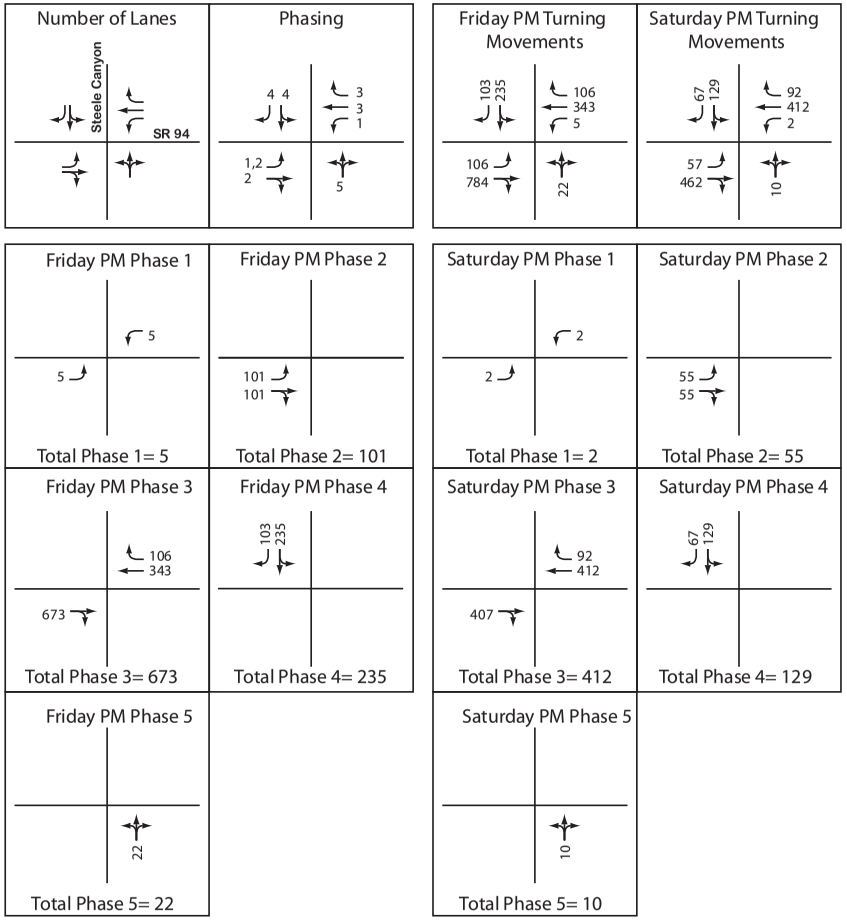
Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Existing Baseline Friday/Saturday



Friday PM TOTAL= 928
Friday PM LOS= Below Capacity

Saturday PM TOTAL= 505
Saturday PM LOS= Below Capacity

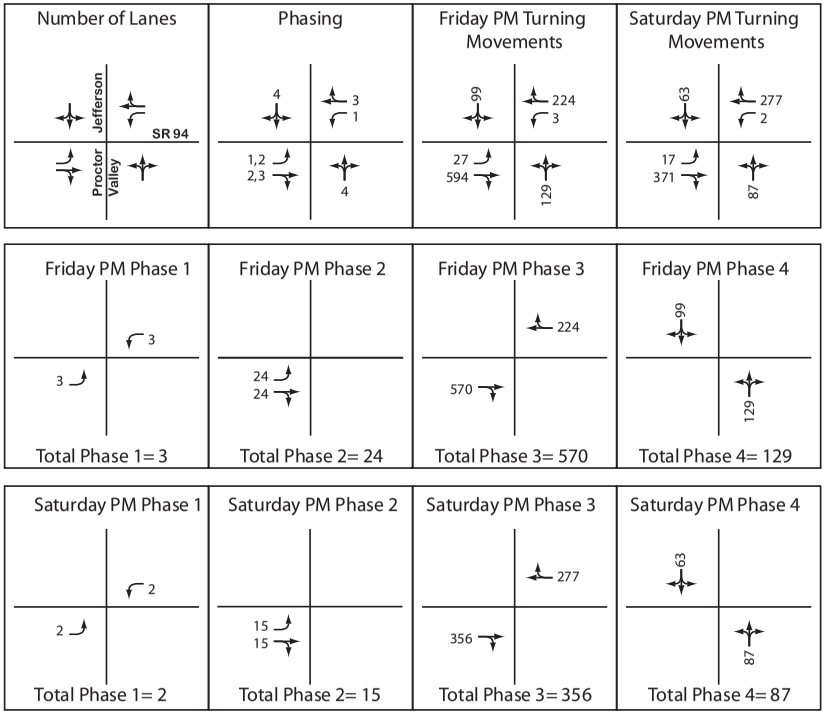
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Existing Baseline Friday/Saturday



Friday PM TOTAL= 1036
Friday PM LOS= Below Capacity

Saturday PM TOTAL= 608
Saturday PM LOS= Below Capacity

Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Existing Baseline Weekend



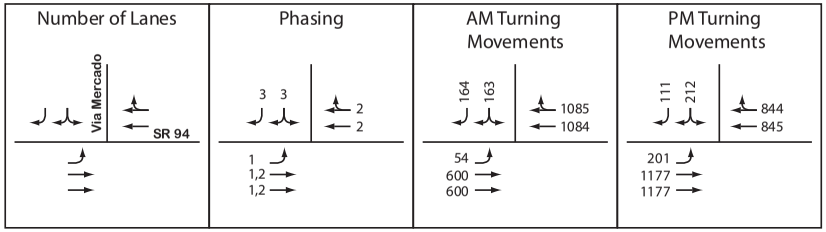
Friday PM TOTAL= 726

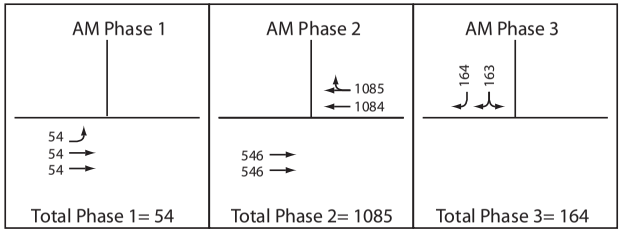
Friday PM LOS= Below Capacity

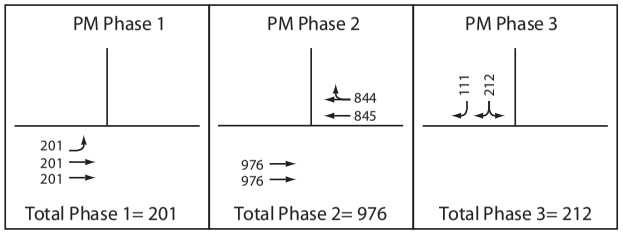
Saturday PM TOTAL= 460

Saturday PM LOS= Below Capacity

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Existing Plus Casino Weekday



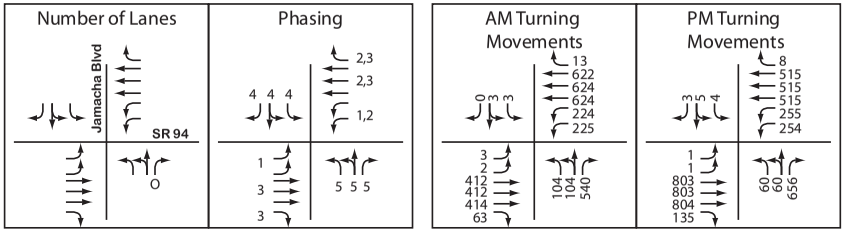


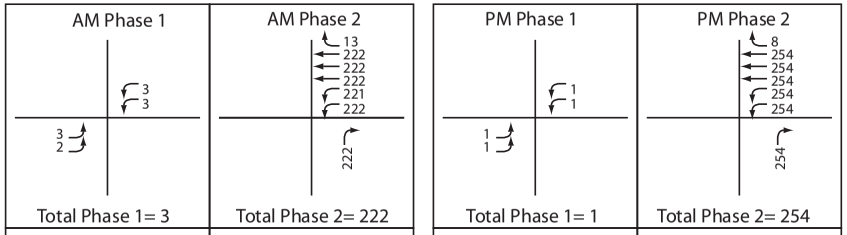


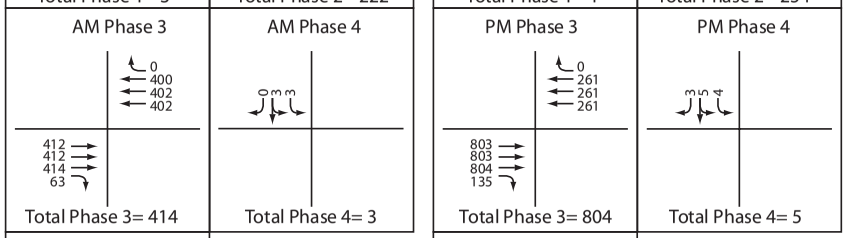
AM TOTAL= 1303 AM LOS= Approaching Capacity

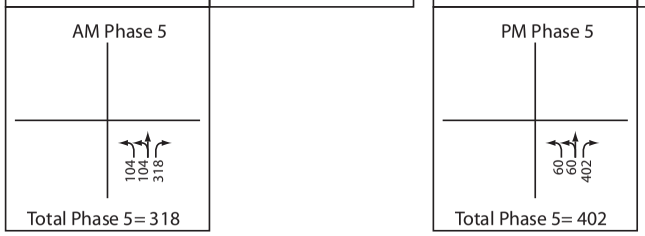
PM TOTAL= 1389 PM LOS= Approaching Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Existing Plus Casino Weekday



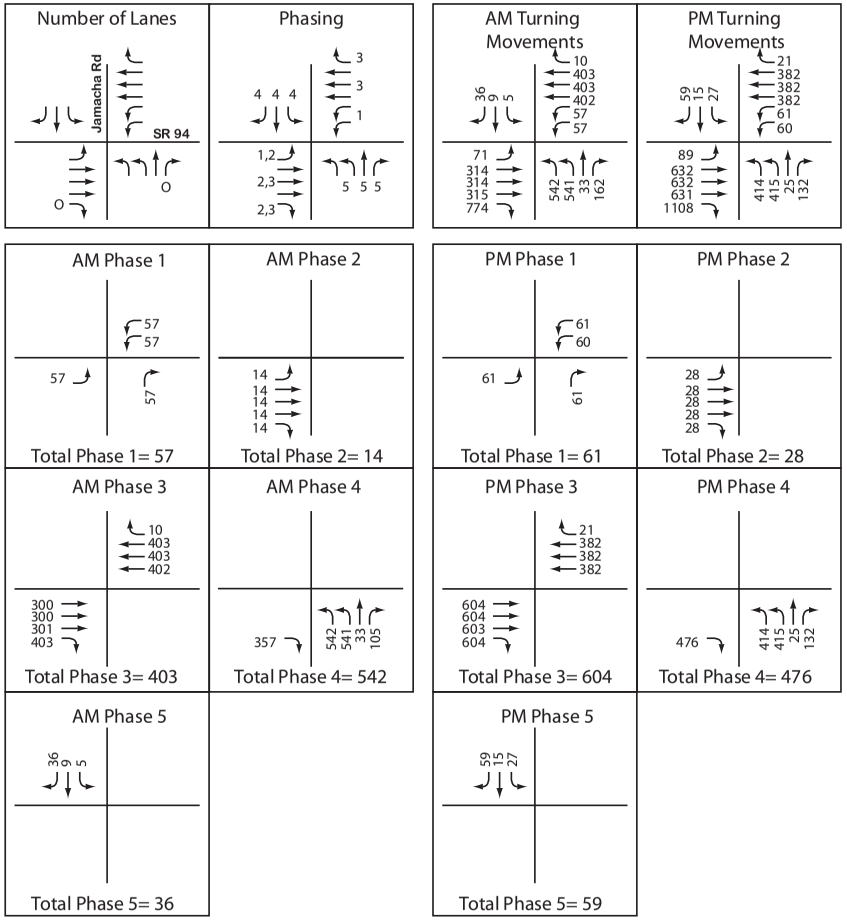






AM TOTAL= 960 PM TOTAL= 1466
AM LOS= Below Capacity PM LOS= Approaching Capacity

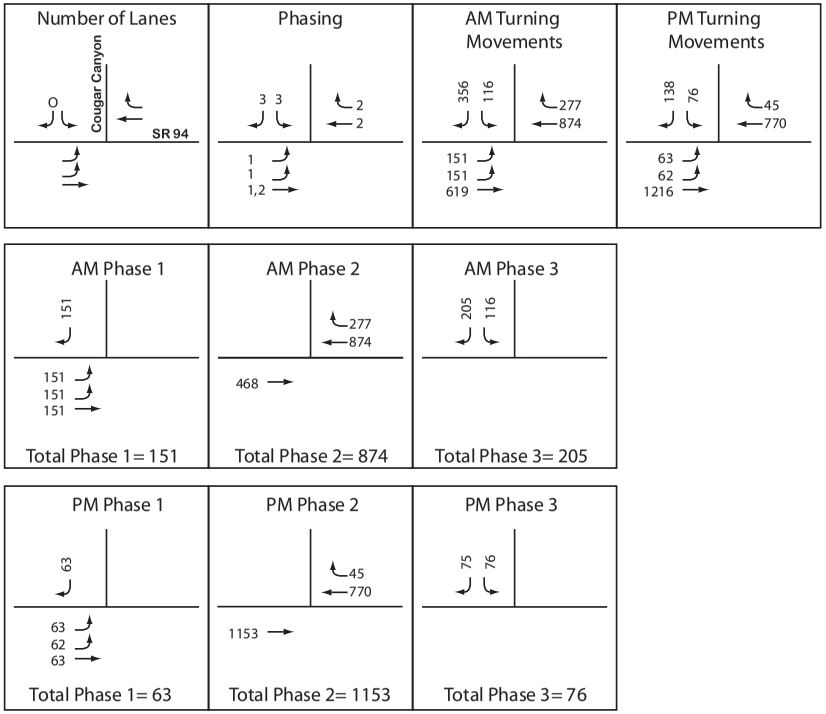
Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Existing Plus Casino Weekday



AM TOTAL= 1052
AM LOS= Below Capacity

PM TOTAL= 1228
PM LOS= Approaching Capacity

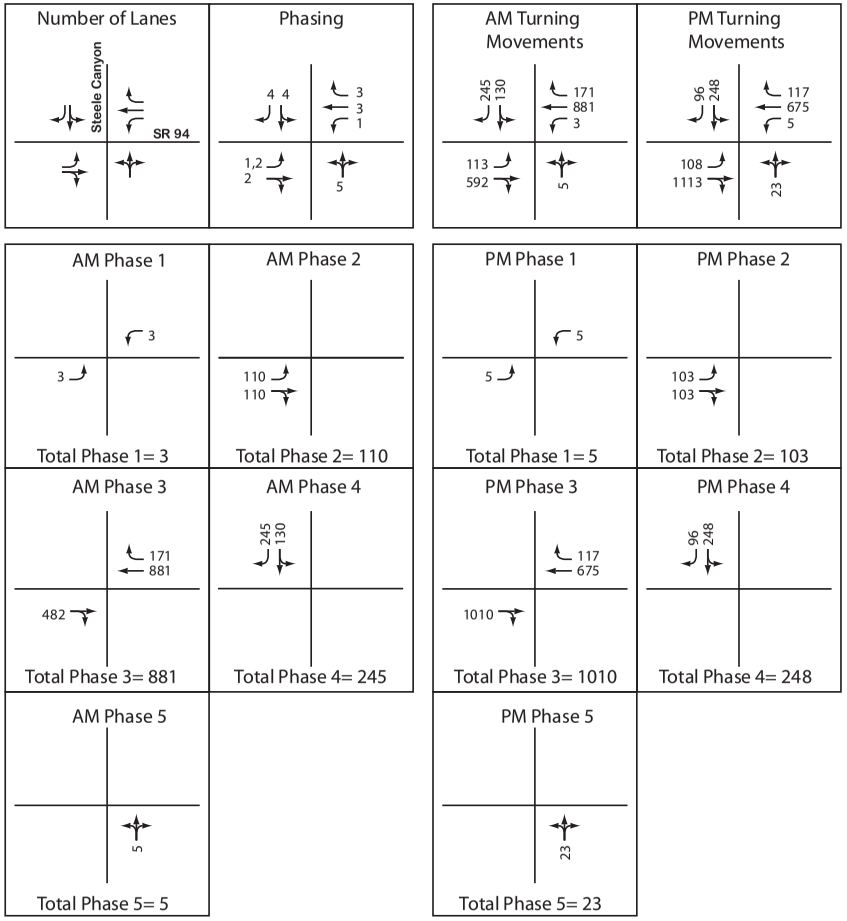
Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Existing Plus Casino Weekday



AM TOTAL= 1230
AM LOS= Approaching Capacity

PM TOTAL= 1292
PM LOS= Approaching Capacity

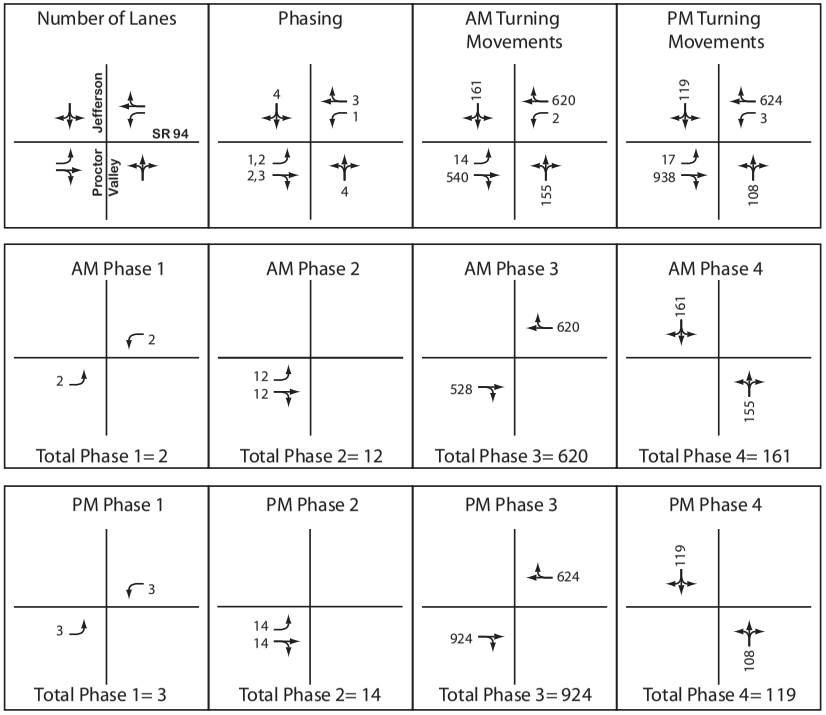
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Existing Plus Casino Weekday



AM TOTAL= 1244
AM LOS= Approaching Capacity

PM TOTAL= 1389
PM LOS= Approaching Capacity

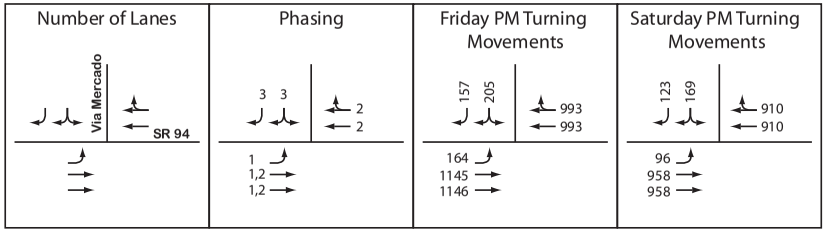
Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Existing Plus Casino Weekday

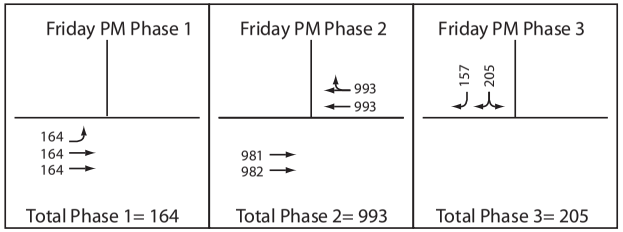


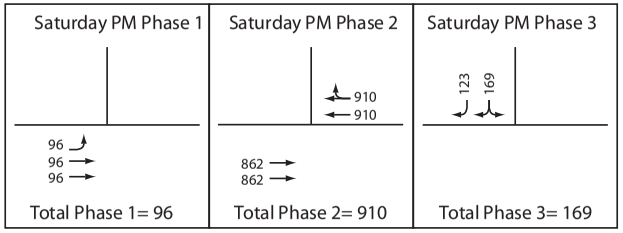
AM TOTAL= 795
AM LOS= Below Capacity

PM TOTAL= 1060
PM LOS= Below Capacity

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Existing Plus Casino Friday/Saturday







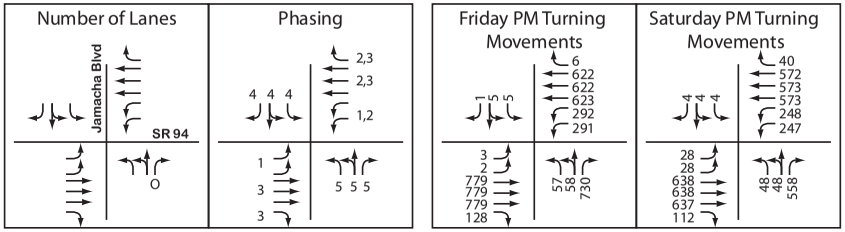
Friday PM TOTAL= 1362

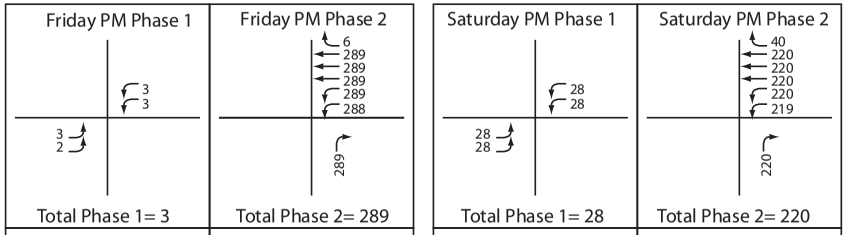
Friday PM LOS= Approaching Capacity

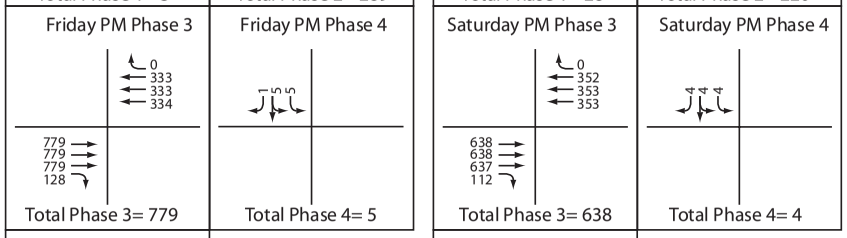
Saturday PM TOTAL= 1175

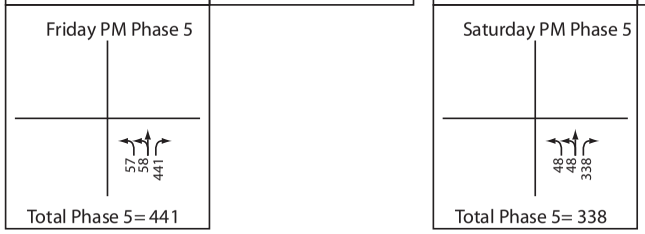
Saturday PM LOS= Below Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Existing Plus Casino Friday/Saturday





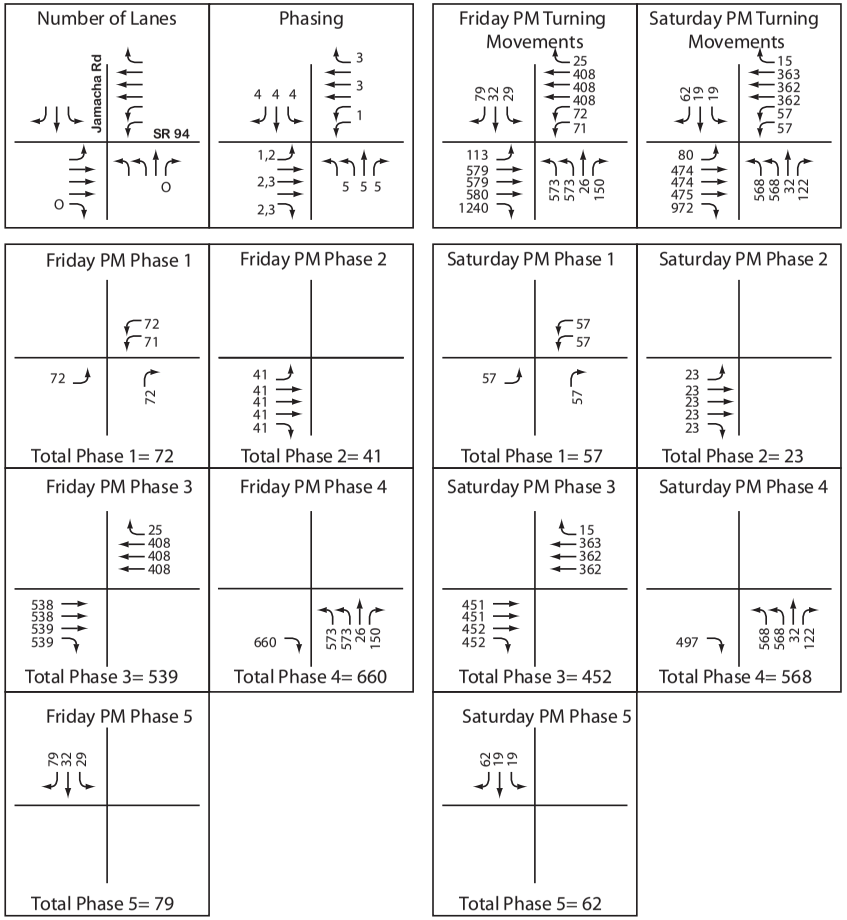




Friday PM TOTAL= 1517
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1228
Saturday PM LOS= Approaching Capacity

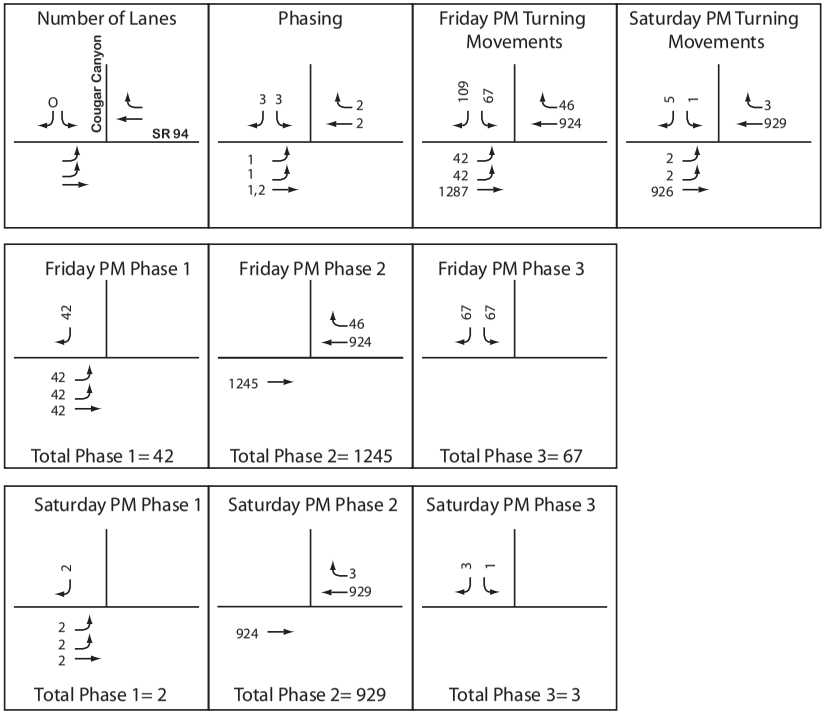
Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Existing Plus Casino Friday/Saturday



Friday PM TOTAL= 1391
Friday PM LOS= Approaching Capacity

Saturday PM TOTAL= 1162
Saturday PM LOS= Below Capacity

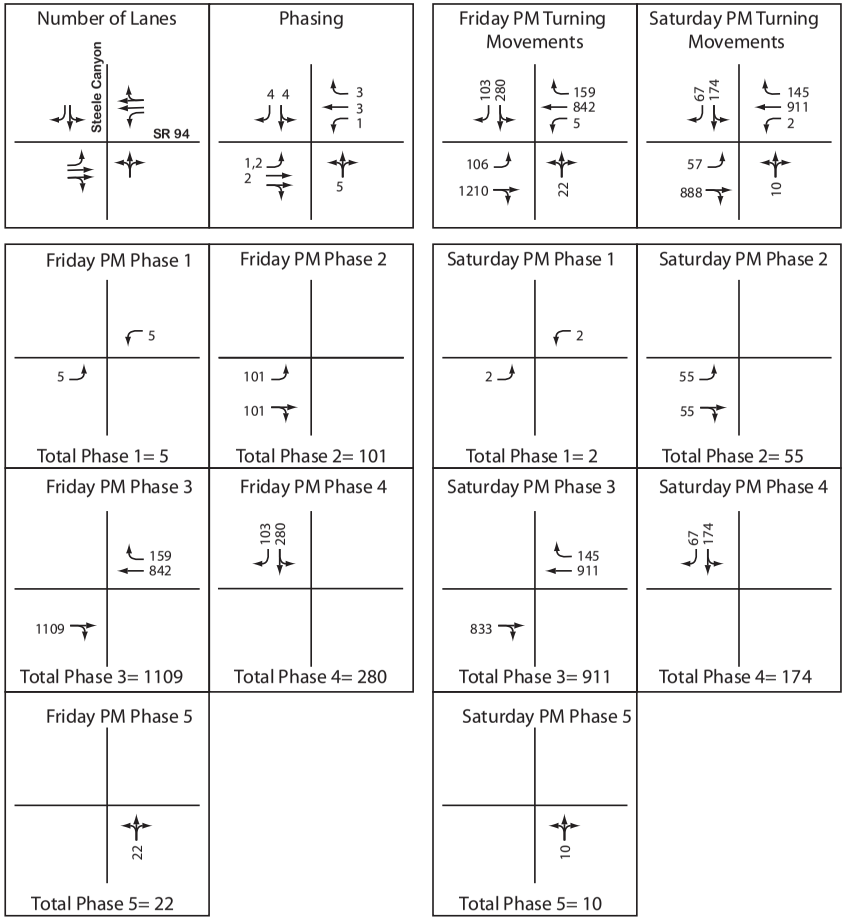
Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Existing Plus Casino Friday/Saturday



Friday PM TOTAL= 1354
Friday PM LOS= Approaching Capacity

Saturday PM TOTAL= 934
Saturday PM LOS= Below Capacity

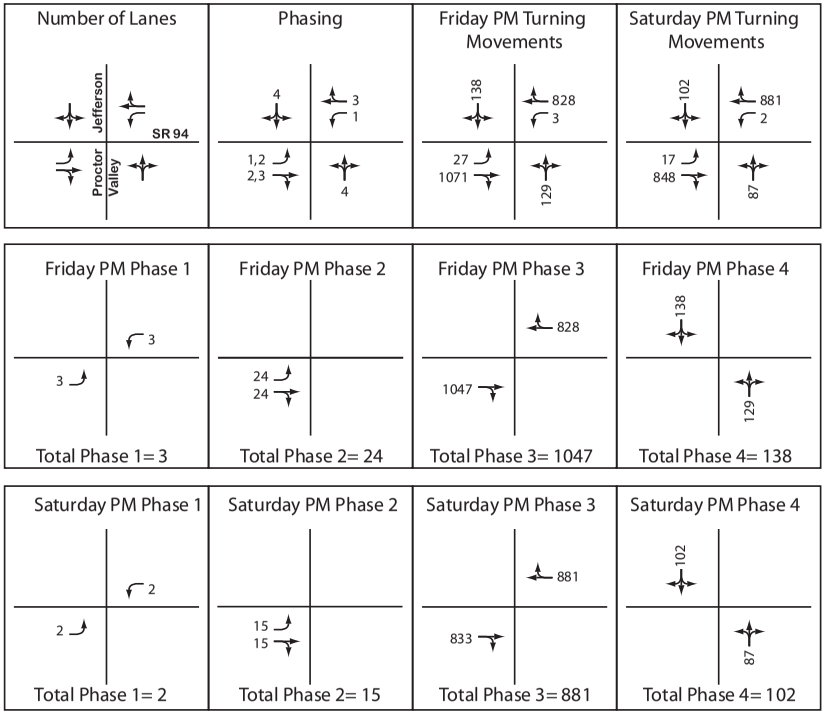
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Existing with Casino Friday/Saturday



Friday PM TOTAL= 1,517
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1,152
Saturday PM LOS= Below Capacity

Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Existing Plus Casino Weekend



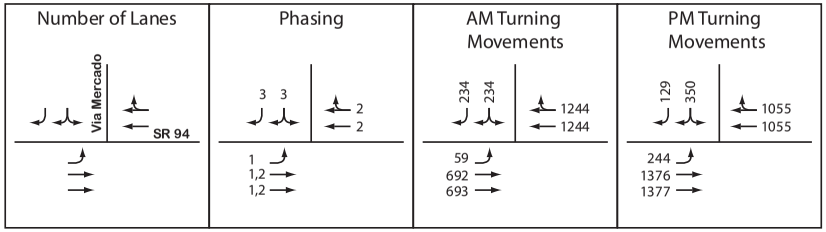
Friday PM TOTAL= 1212

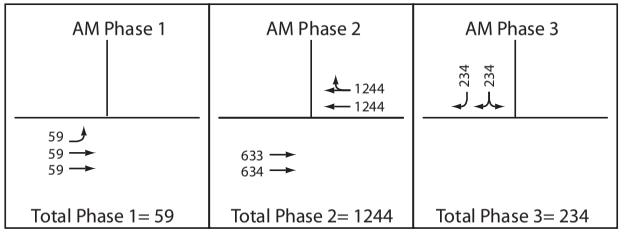
Friday PM LOS= Approaching Capacity

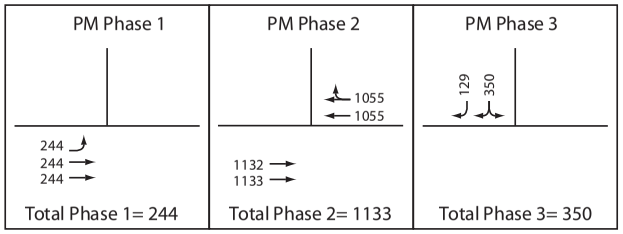
Saturday PM TOTAL= 1000

Saturday PM LOS= Below Capacity

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Near Term No Build Weekday - Proposed Project



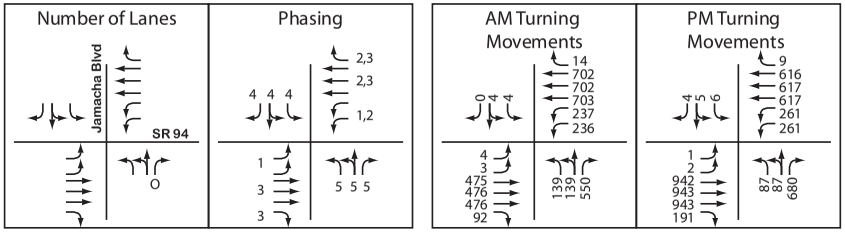


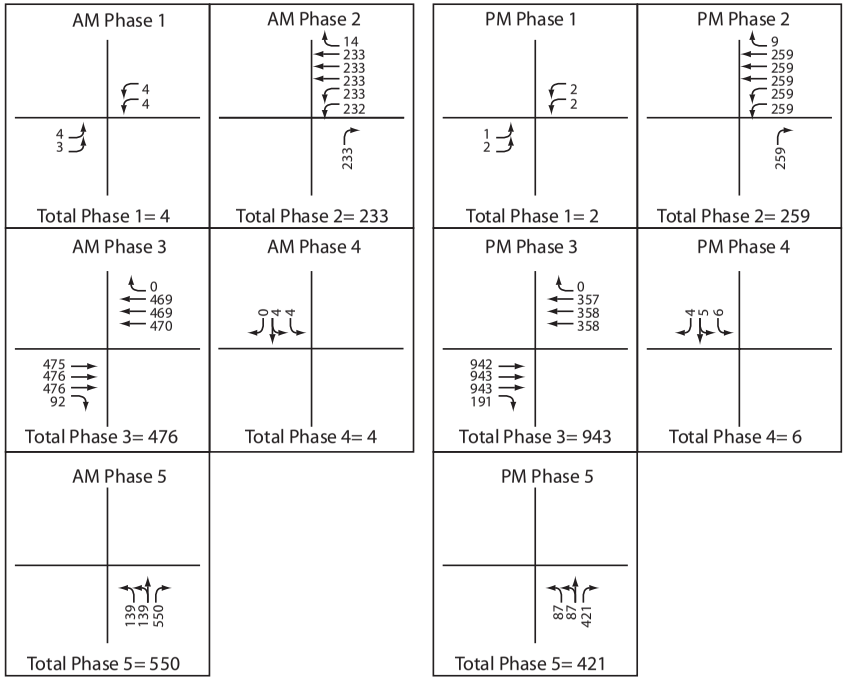


AM TOTAL= 1537 AM LOS= Above Capacity

PM TOTAL= 1727 PM LOS= Above Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Near Term No Build Weekday

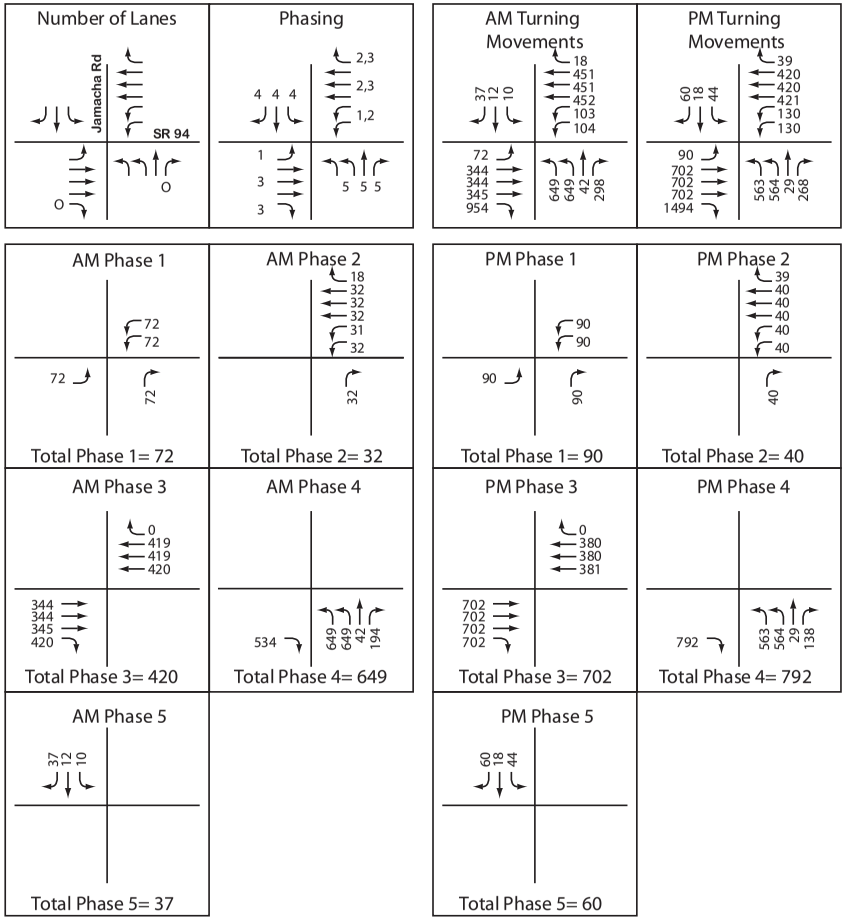




AM TOTAL= 1267
AM LOS= Approaching Capacity

PM TOTAL= 1631
PM LOS= Above Capacity

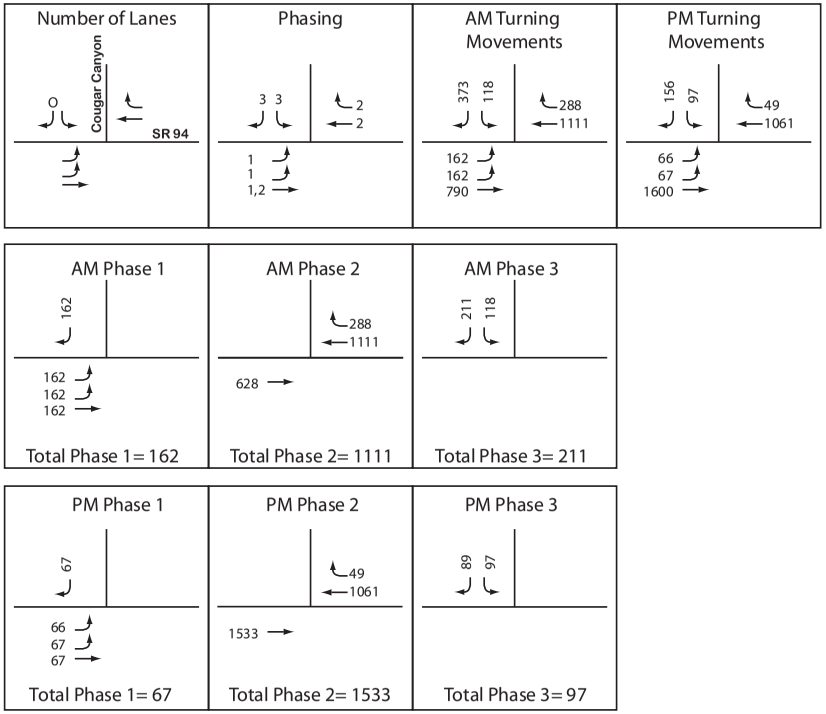
Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Near Term No Build Weekday



AM TOTAL= 1210
AM LOS= Approaching Capacity

PM TOTAL= 1684
PM LOS= Above Capacity

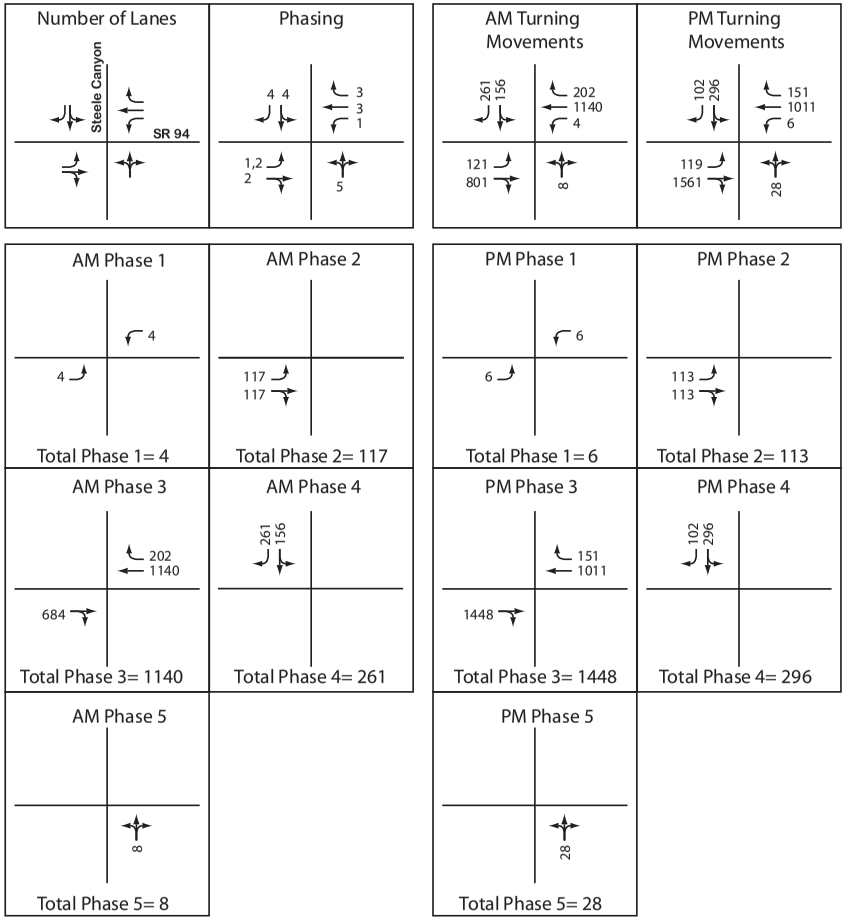
Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Near Term No Build Weekday



AM TOTAL= 1484
AM LOS= Approaching Capacity

PM TOTAL= 1697
PM LOS= Above Capacity

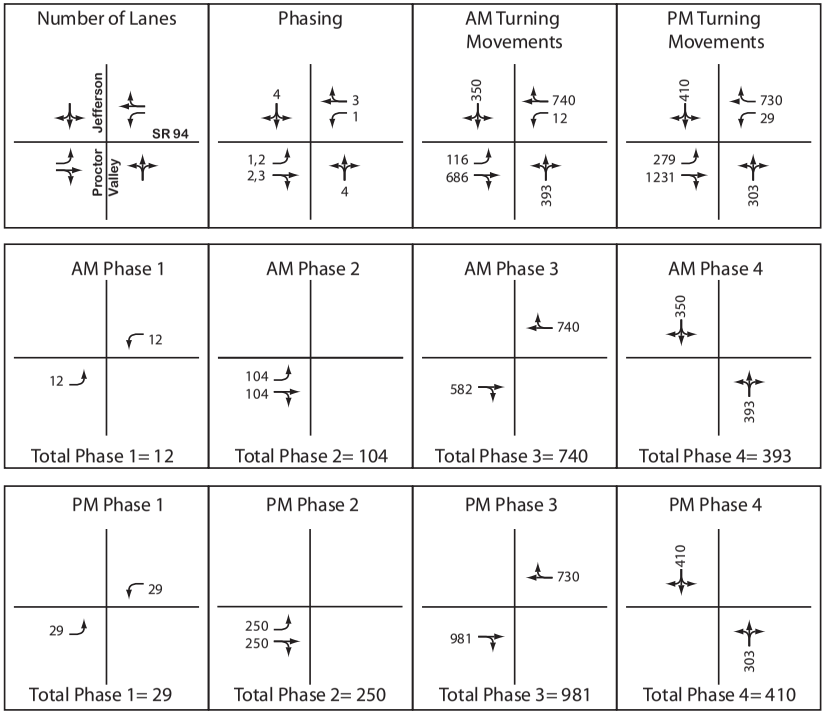
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Near Term No Build Weekday



AM TOTAL= 1530
AM LOS= Above Capacity

PM TOTAL= 1891
PM LOS= Above Capacity

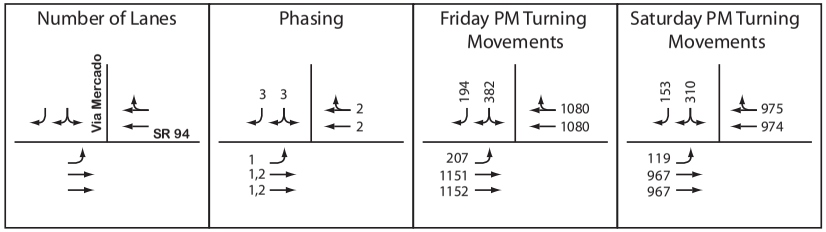
Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Near Term No Build Weekday

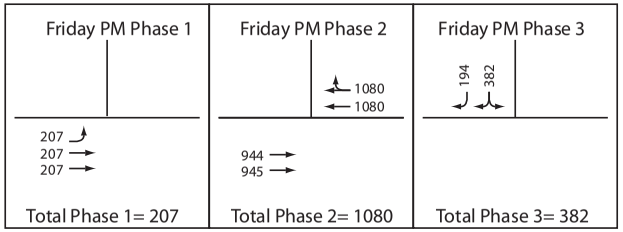


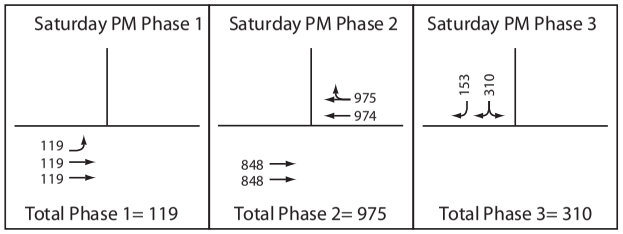
AM TOTAL= 1249
AM LOS= Approaching Capacity

PM TOTAL= 1670
PM LOS= Above Capacity

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Near Term No Build Friday/Saturday







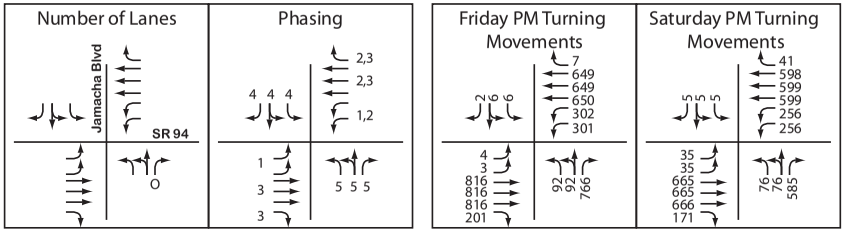
Friday PM TOTAL= 1669

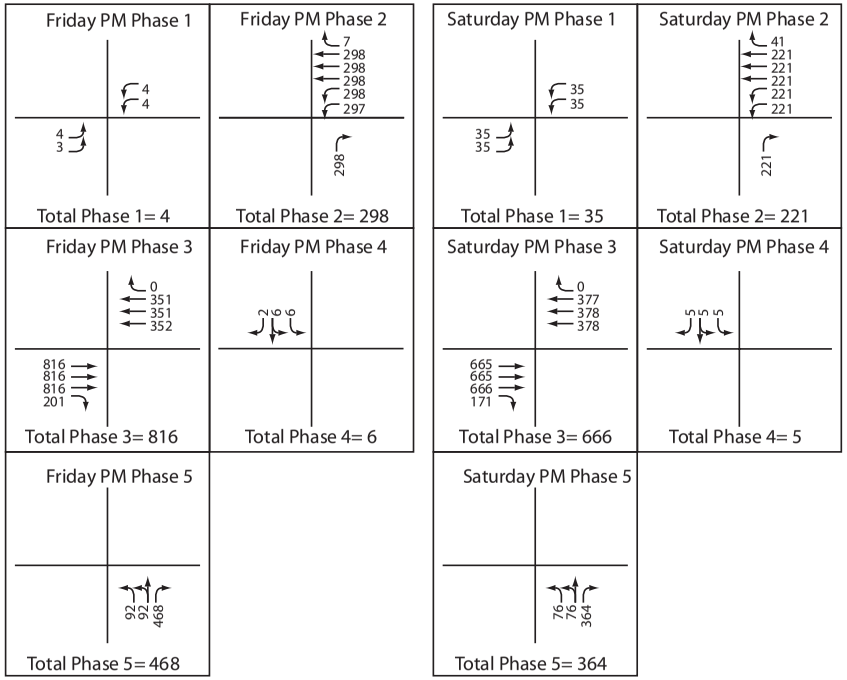
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1404

Saturday PM LOS= Approaching Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Near Term No Build Friday/Saturday

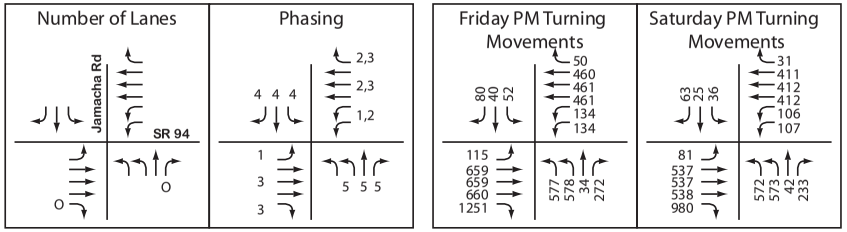


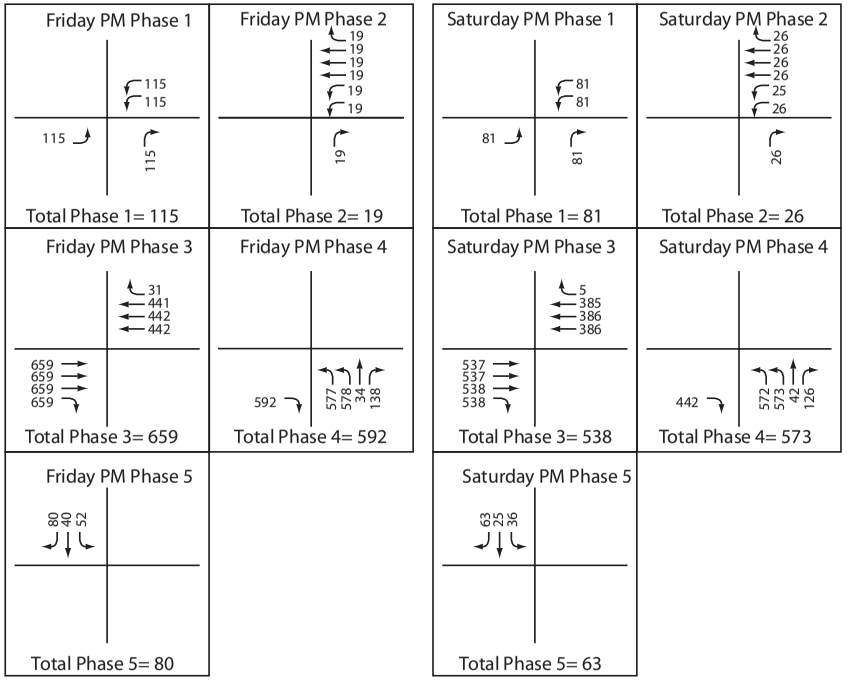


Friday PM TOTAL= 1592
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1291
Saturday PM LOS= Approaching Capacity

Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Near Term No Build Friday/Saturday

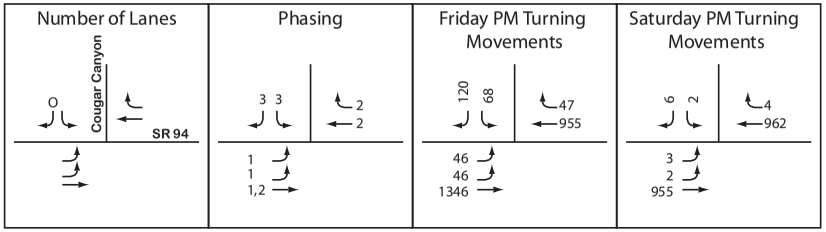


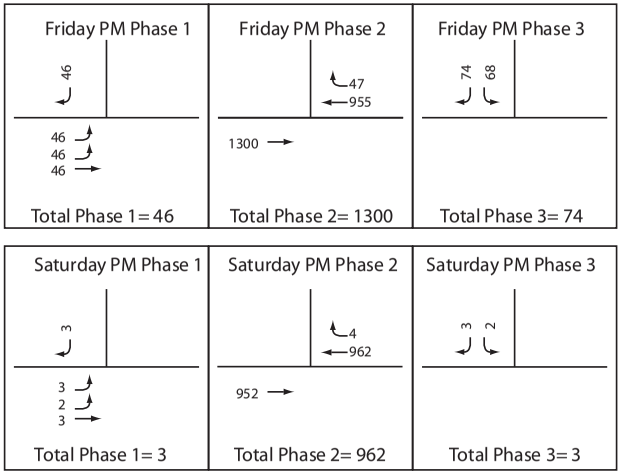


Friday PM TOTAL= 1465
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1281
Saturday PM LOS= Approaching Capacity

Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Near Term No Build Friday/Saturday

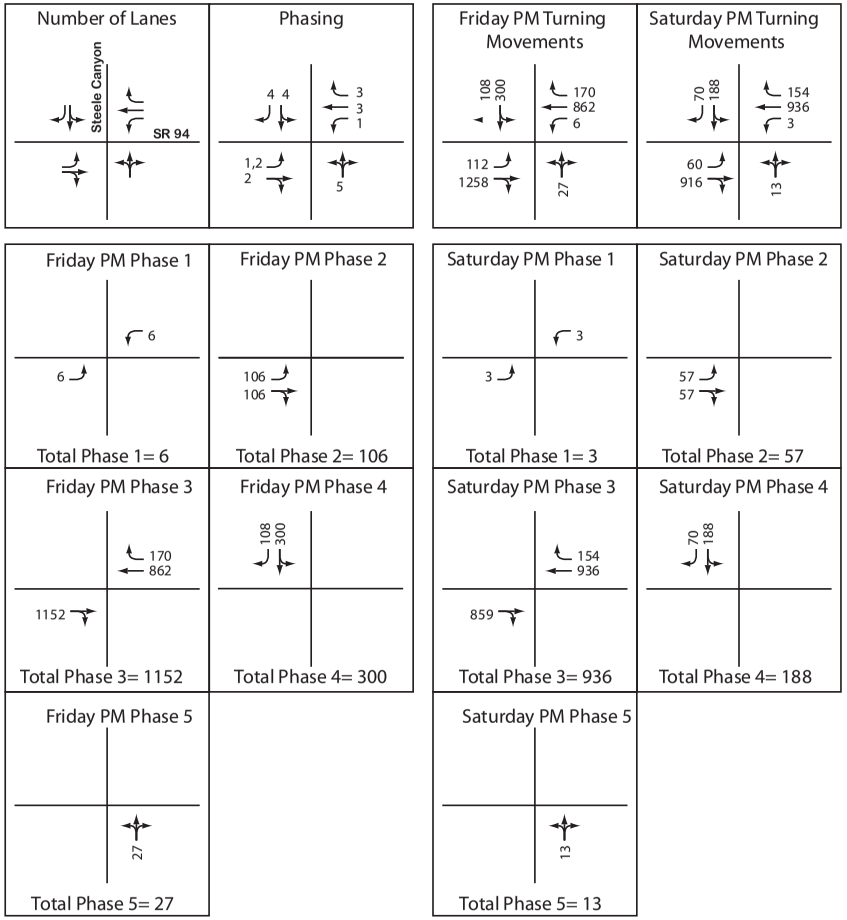




Friday PM TOTAL= 1420
Friday PM LOS= Approaching Capacity

Saturday PM TOTAL= 968
Saturday PM LOS= Below Capacity

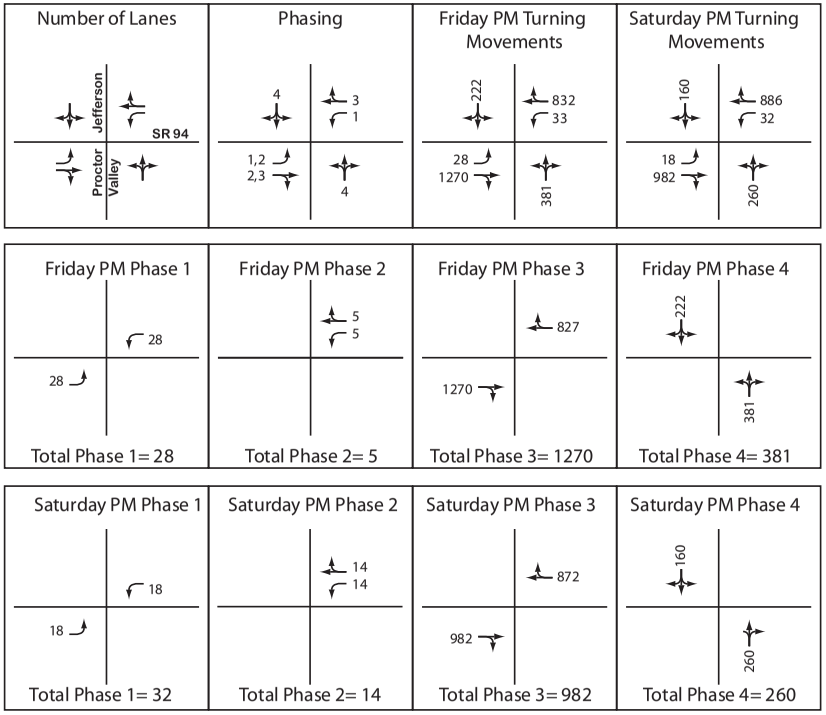
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Near Term No Build Friday/Saturday



Friday PM TOTAL= 1591
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1197
Saturday PM LOS= Below Capacity

Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Near Term No Build Friday/Saturday



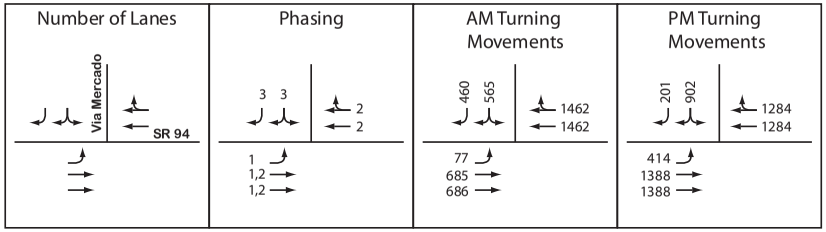
Friday PM TOTAL= 1684

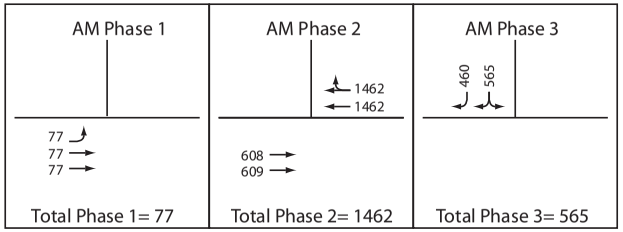
Friday PM LOS= Above Capacity

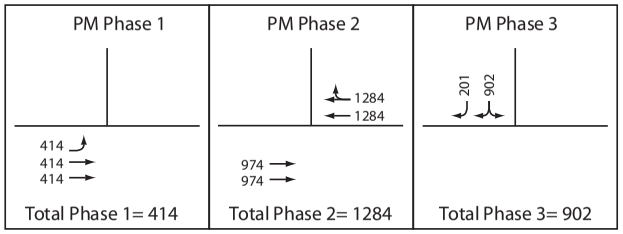
Saturday PM TOTAL= 1288

Saturday PM LOS= Approaching Capacity

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Horizon Year No Build Weekday



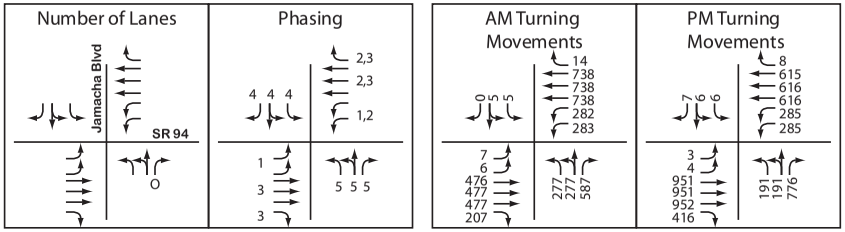


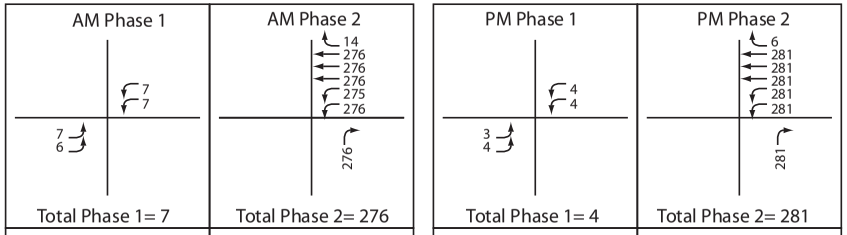


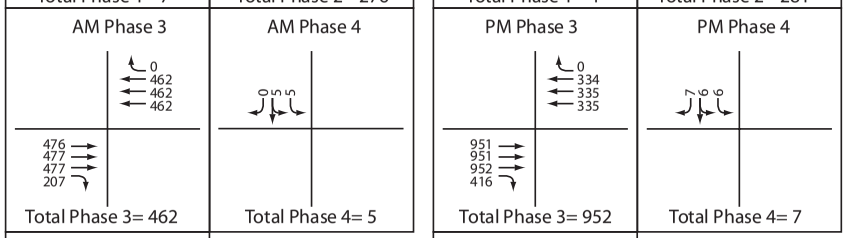
AM TOTAL= 2104 AM LOS= Above Capacity

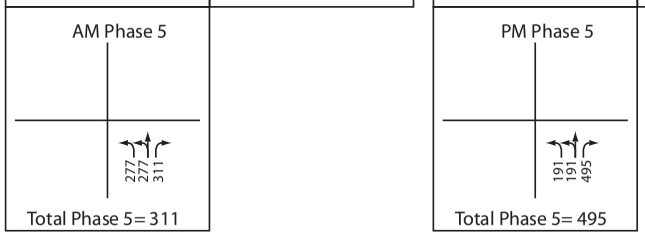
PM TOTAL= 2600 PM LOS= Above Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Horizon Year No Build Weekday





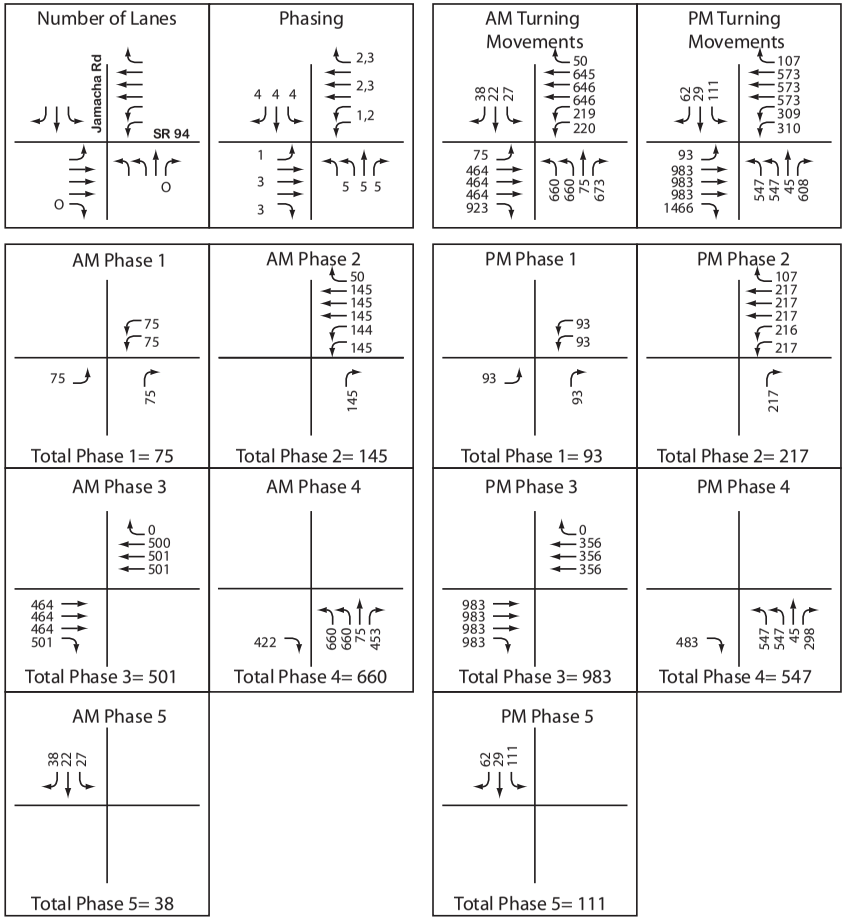




AM TOTAL= 1061
AM LOS= Below Capacity

PM TOTAL= 1739
PM LOS= Above Capacity

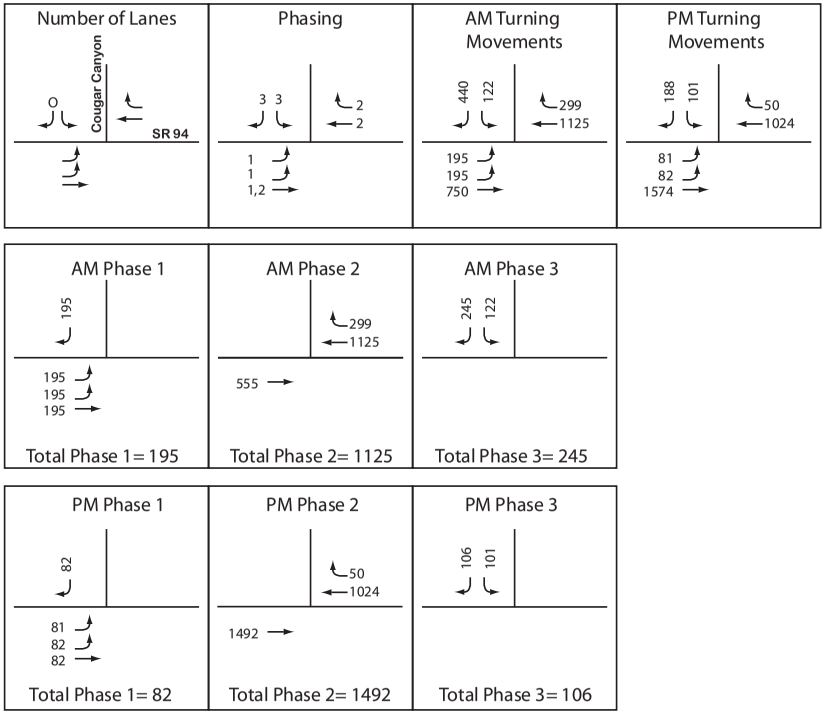
Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Horizon Year No Build Weekday



AM TOTAL= 1419
AM LOS= Approaching Capacity

PM TOTAL= 1951
PM LOS= Above Capacity

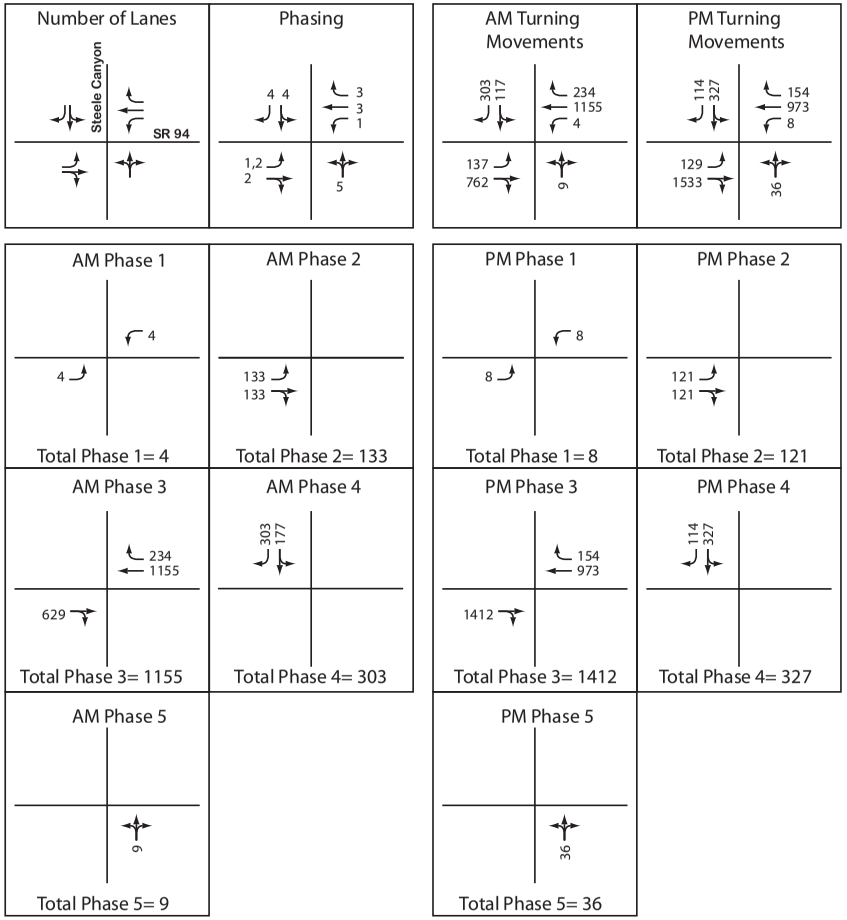
Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Horizon Year No Build Weekday



AM TOTAL= 1565
AM LOS= Above Capacity

PM TOTAL= 1680
PM LOS= Above Capacity

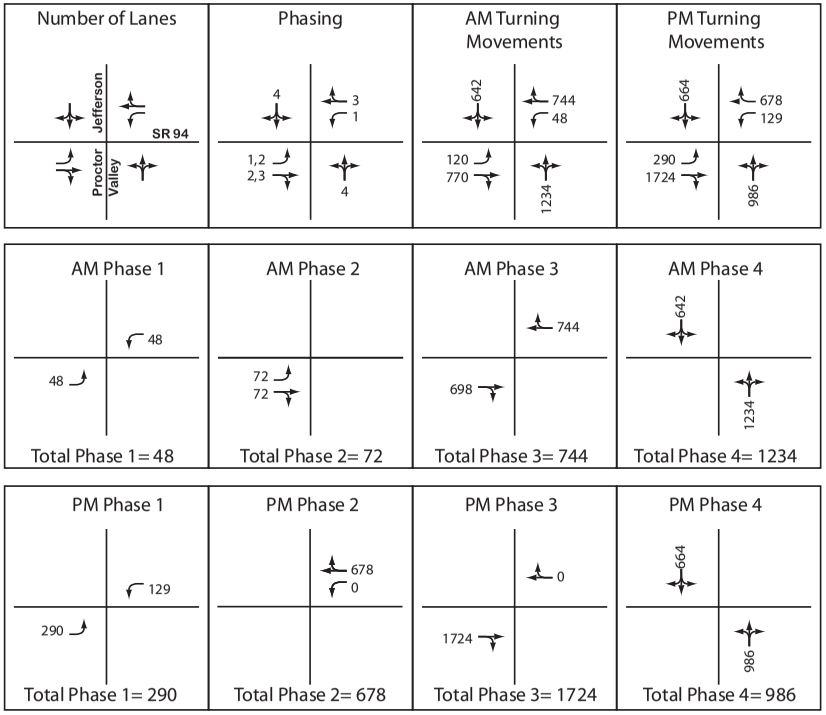
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Horizon Year No Build Weekday



AM TOTAL= 1604
AM LOS= Above Capacity

PM TOTAL= 1904
PM LOS= Above Capacity

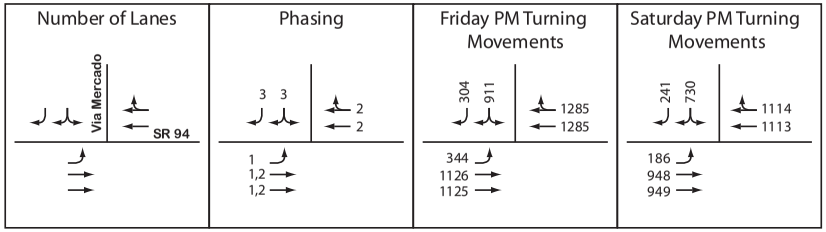
Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Horizon Year No Build Weekday

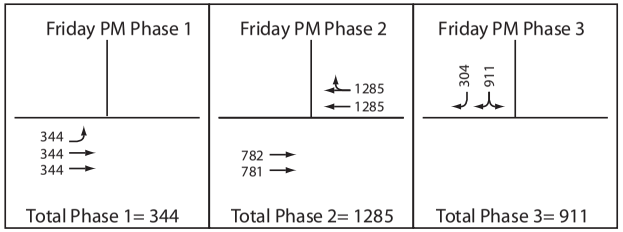


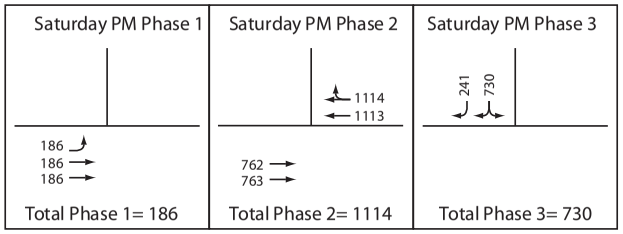
AM TOTAL= 2098 AM LOS= Above Capacity

PM TOTAL= 3678 PM LOS= Above Capacity

Intersection Name: SR 94 & Via Mercado
Date: August 27, 2013
Scenario: Horizon Year No Build Friday/Saturday







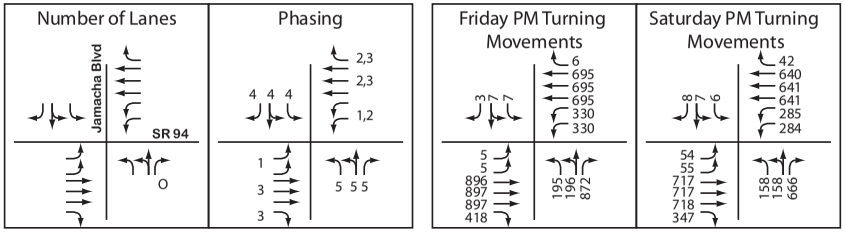
Friday PM TOTAL= 2540

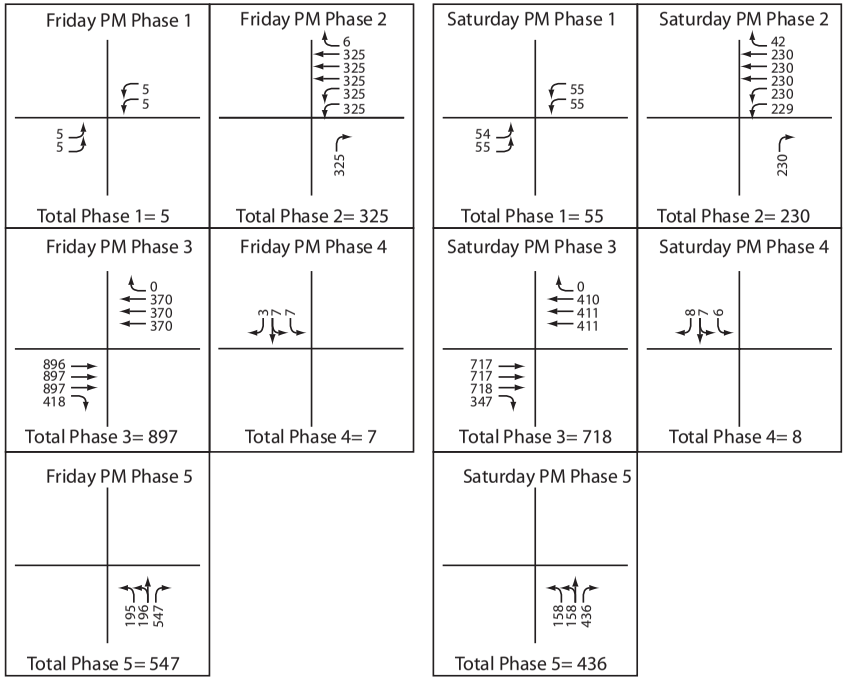
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 2030

Saturday PM LOS= Above Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: August 27, 2013
Scenario: Horizon Year No Build Friday/Saturday

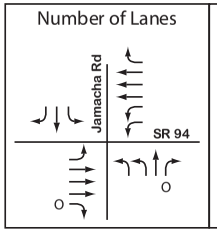


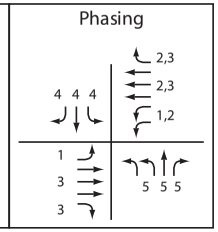


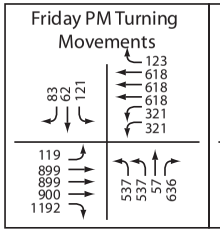
Friday PM TOTAL= 1781
Friday PM LOS= Above Capacity

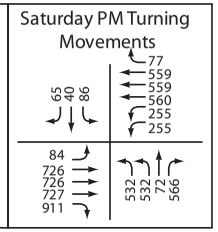
Saturday PM TOTAL= 1447
Saturday PM LOS= Approaching Capacity

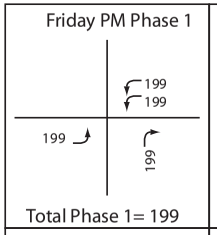
Intersection Name: SR 94 & Jamacha Rd
Date: August 27, 2013
Scenario: Horizon Year No Build Friday/Saturday

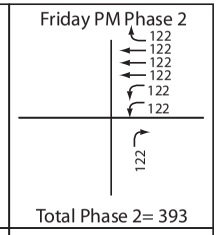


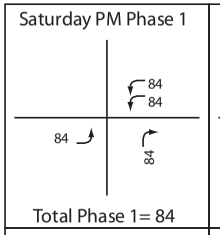


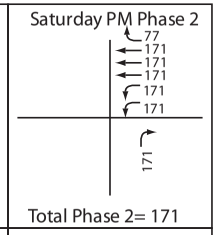


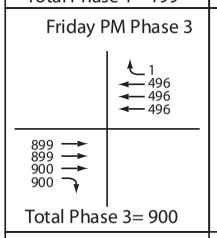


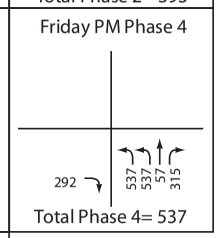


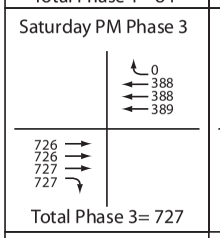


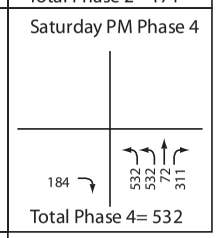


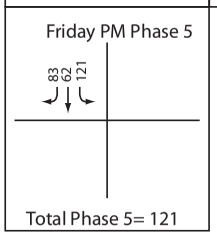


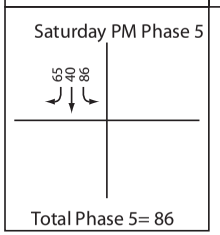








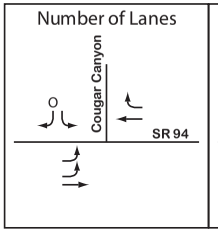


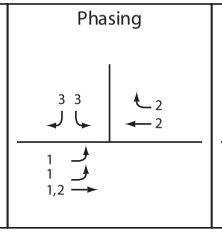


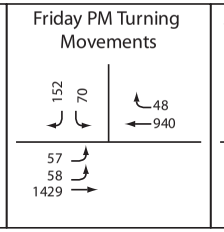
Friday PM TOTAL= 2150
Friday PM LOS= Above Capacity

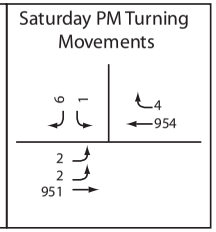
Saturday PM TOTAL= 1600
Saturday PM LOS= Above Capacity

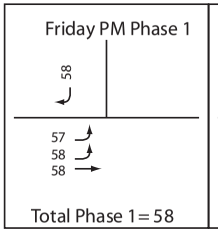
Intersection Name: SR 94 & Cougar Canyon Rd
Date: August 27, 2013
Scenario: Horizon Year No Buid Friday/Saturday

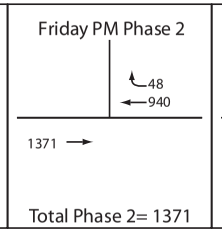


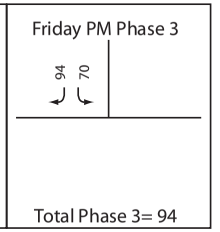


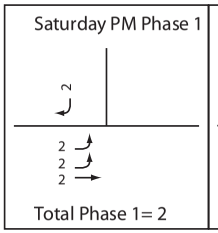


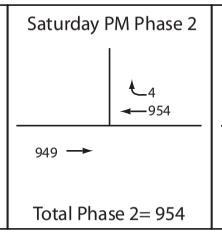


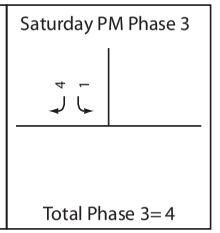












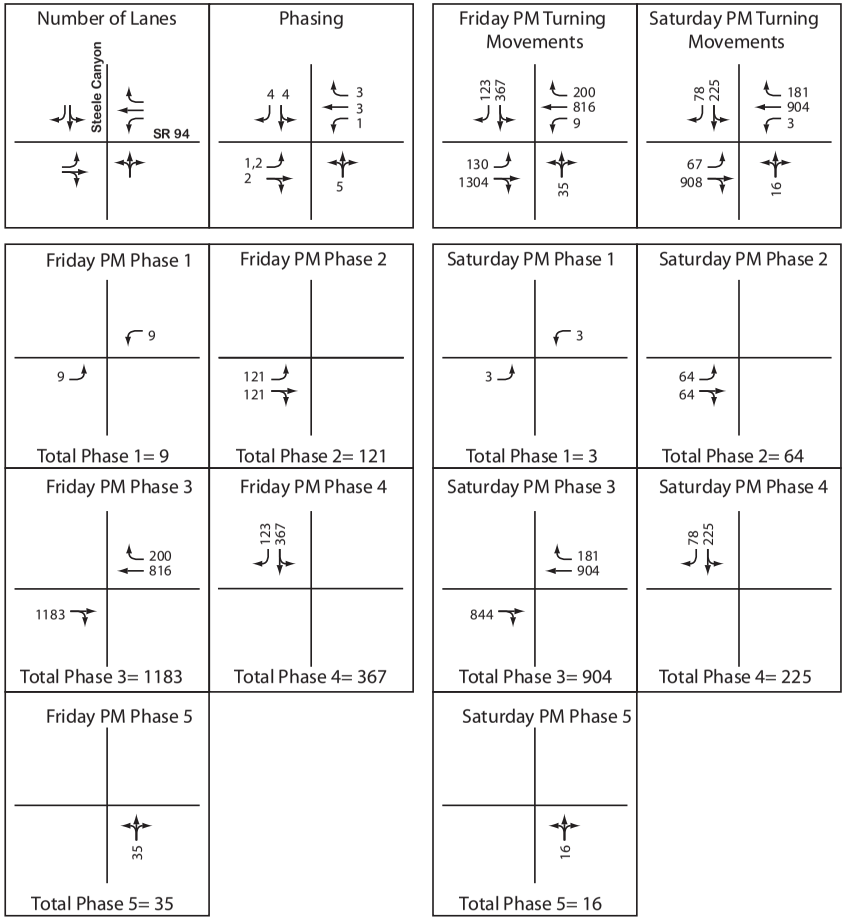
Friday PM TOTAL= 1523

Friday PM LOS= Above Capacity

Saturday PM TOTAL= 960

Saturday PM LOS= Below Capacity

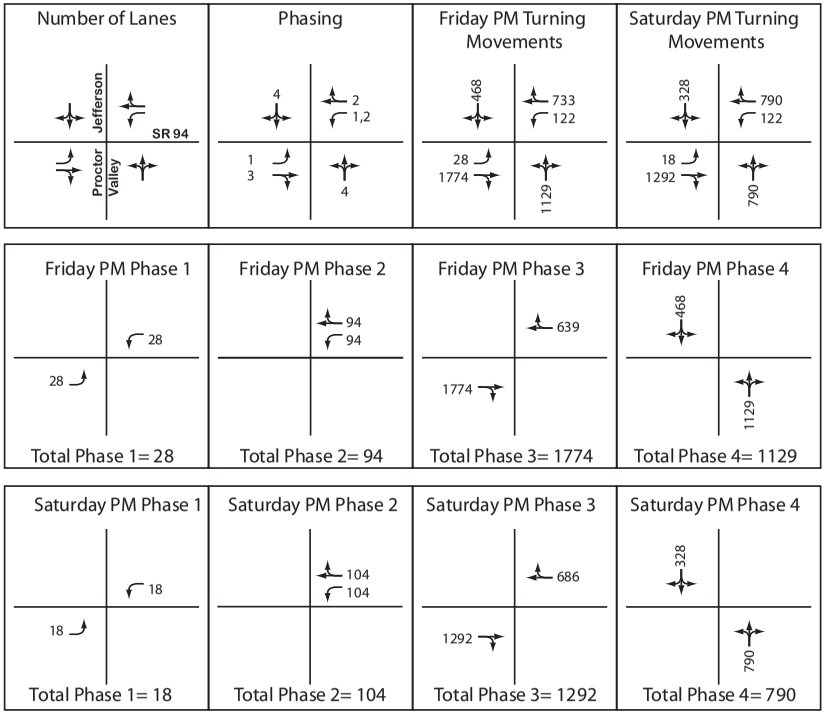
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Horizon Year No Build Friday/Saturday



Friday PM TOTAL= 1715
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1212
Saturday PM LOS= Approaching Capacity

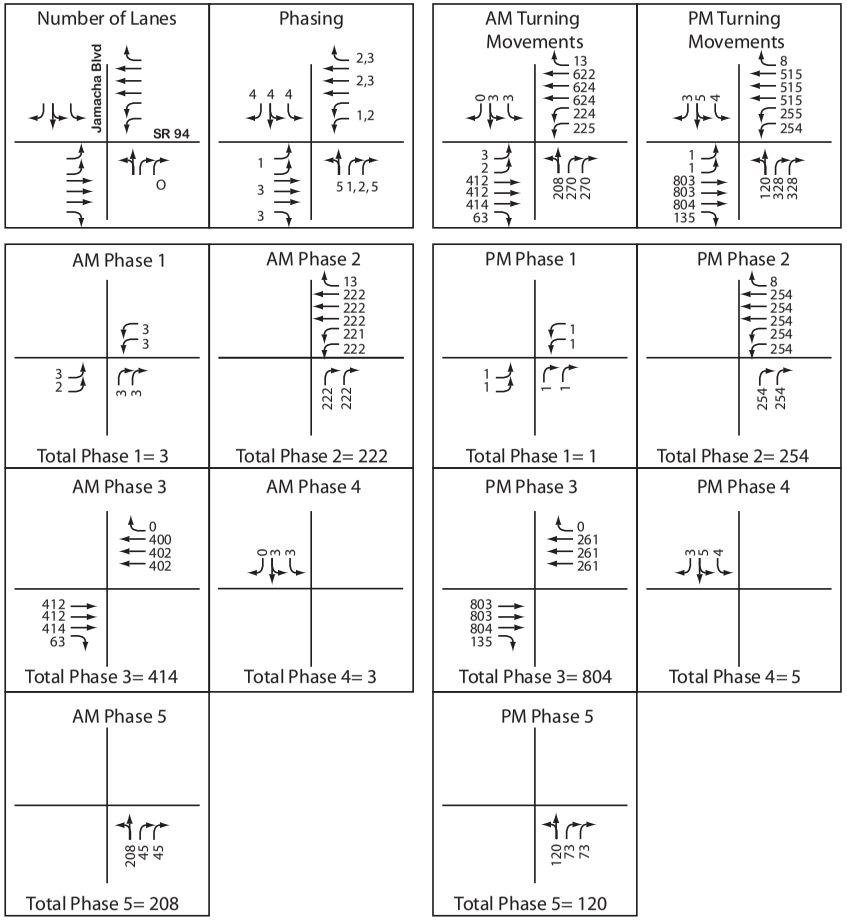
Intersection Name: SR 94 & Proctor Valley Rd/Jefferson Rd
Date: August 27, 2013
Scenario: Horizon Year No Build Friday/Saturday



Friday PM TOTAL= 3025
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 2204
Saturday PM LOS= Above Capacity

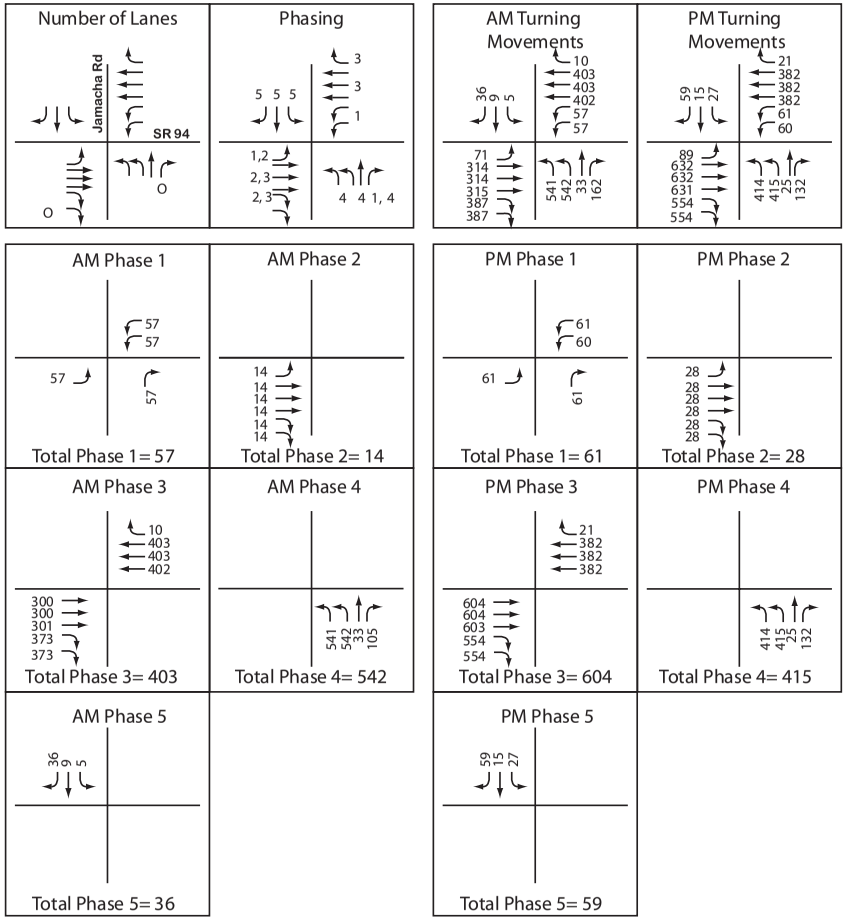
Intersection Name: SR 94 & Jamacha Blvd
Date: April 16, 2014
Scenario: Existing with Casino Weekday with Project



AM TOTAL= 850
AM LOS= Below Capacity

PM TOTAL= 1184
PM LOS= Below Capacity

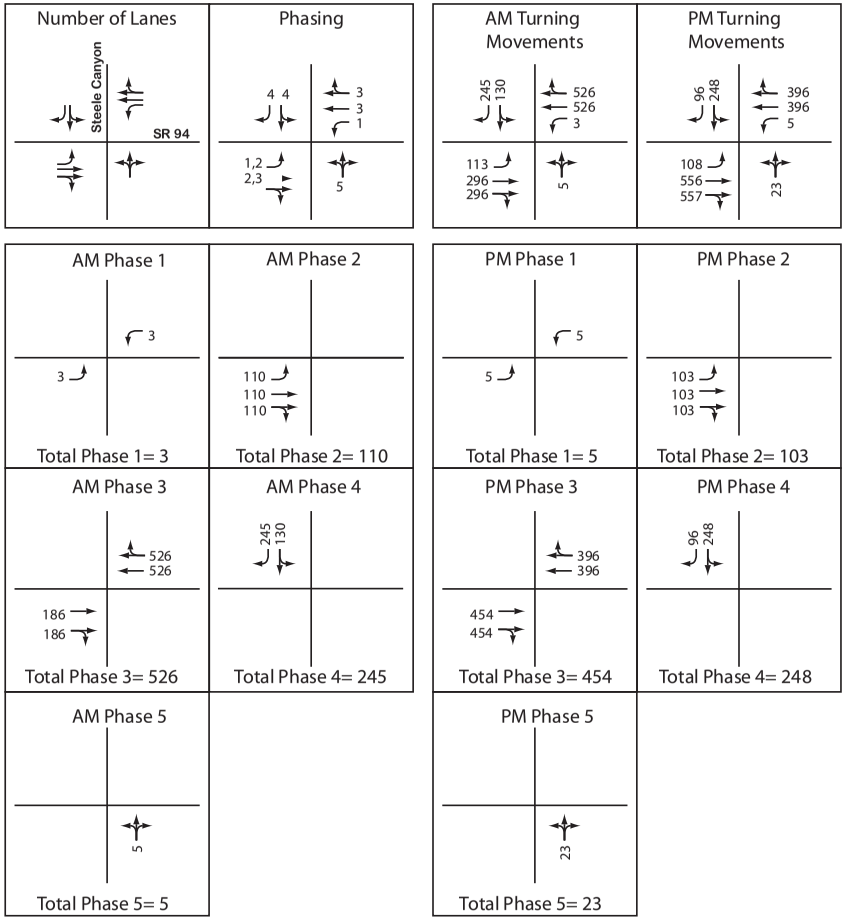
Intersection Name: SR 94 & Jamacha Rd
Date: April 16, 2014
Scenario: Existing with Casino Weekday with Project



AM TOTAL= 1052
AM LOS= Below Capacity

PM TOTAL= 1167
PM LOS= Below Capacity

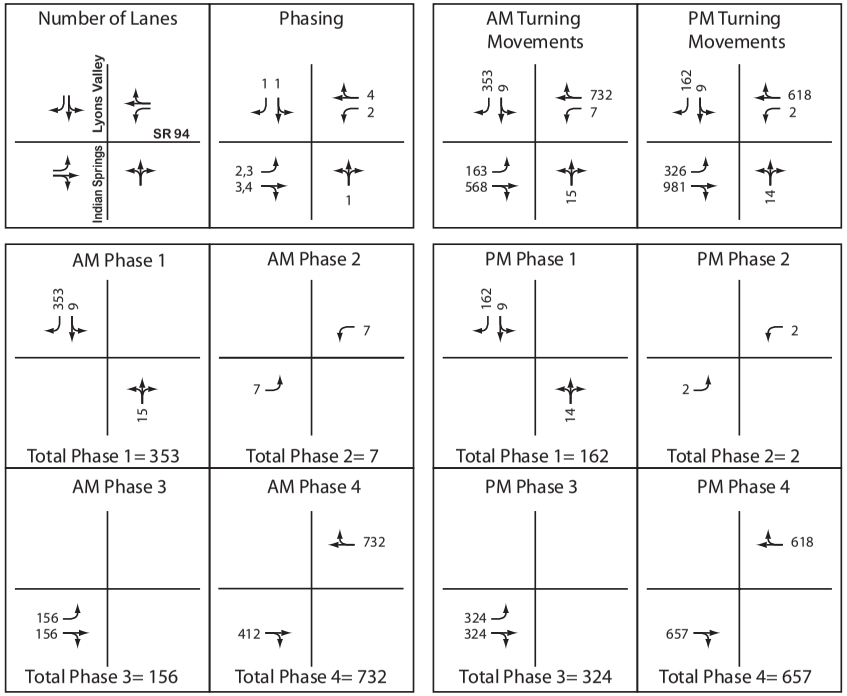
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Existing with Casino Weekday with Project



AM TOTAL= 889
AM LOS= Below Capacity

PM TOTAL= 833
PM LOS= Below Capacity

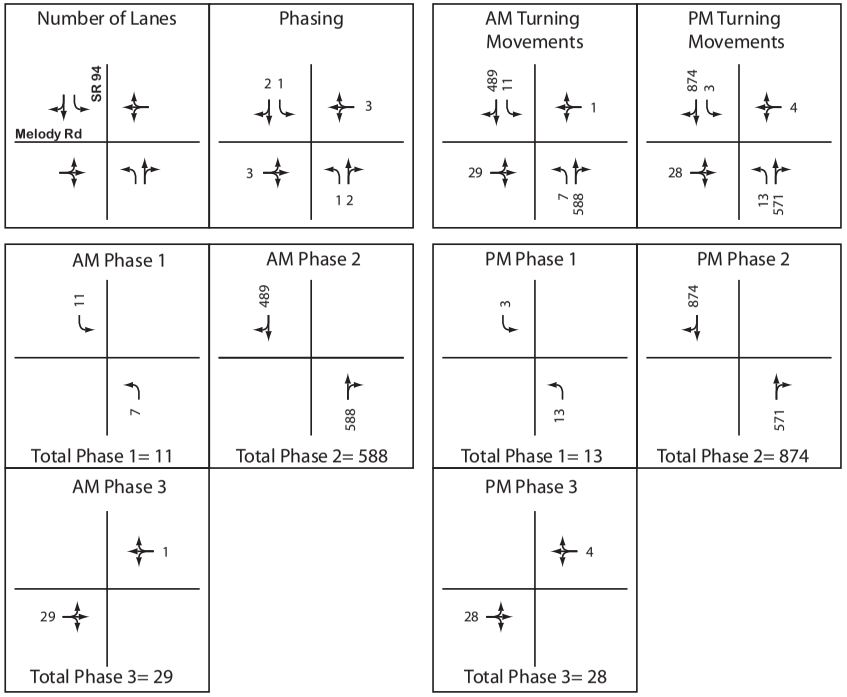
Intersection Name: SR 94 & Lyons Valley Rd/Indian Springs Dr
Date: August 30, 2013
Scenario: Existing Weekday with Project Alternatives 1-2



AM TOTAL= 1,248
AM LOS= Approaching Capacity

PM TOTAL= 1,145
PM LOS= Below Capacity

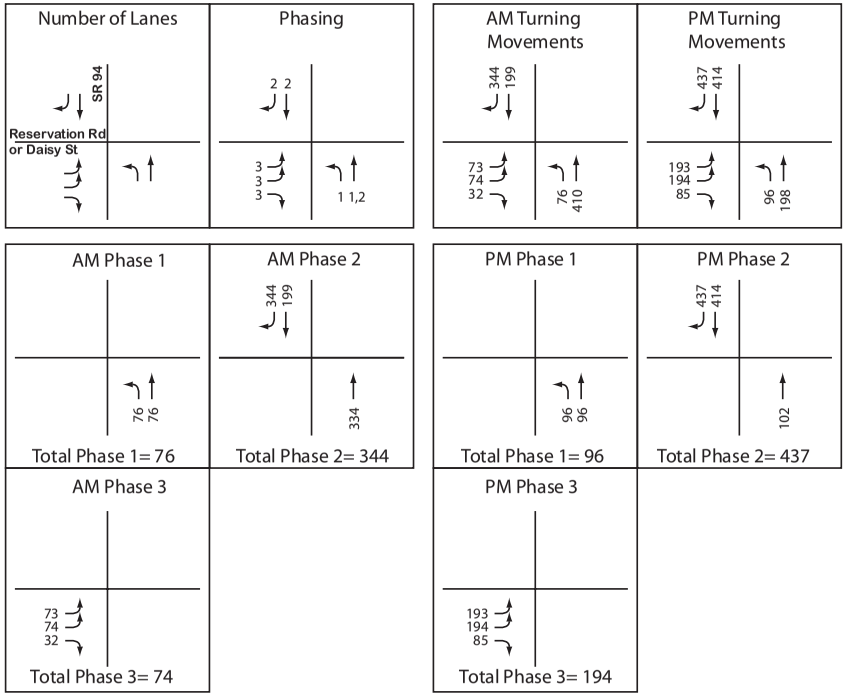
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Existing Weekday with Project Alternatives 1-2



AM TOTAL = 628
AM LOS = Below Capacity

PM TOTAL = 915
PM LOS= Below Capacity

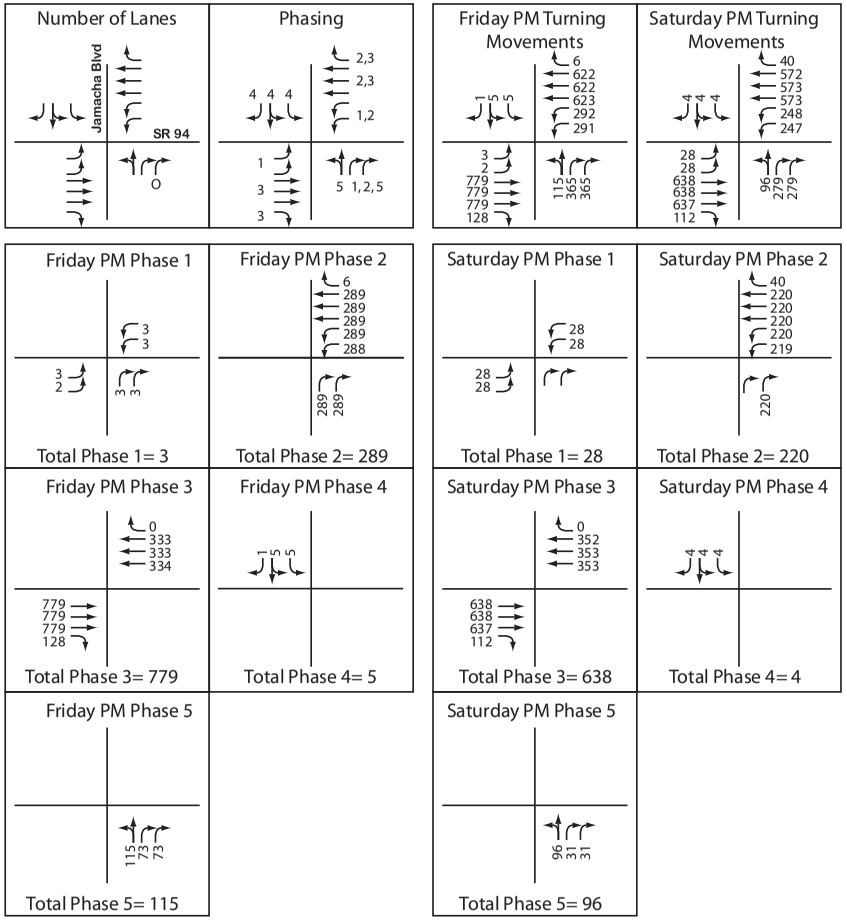
Intersection Name: SR 94 & Resevation Rd
Date: September 3, 2013
Scenario: Existing Weekday with Project Alternatives 1-2



AM TOTAL = 494
AM LOS = Below Capacity

PM TOTAL = 727
PM LOS= Below Capacity

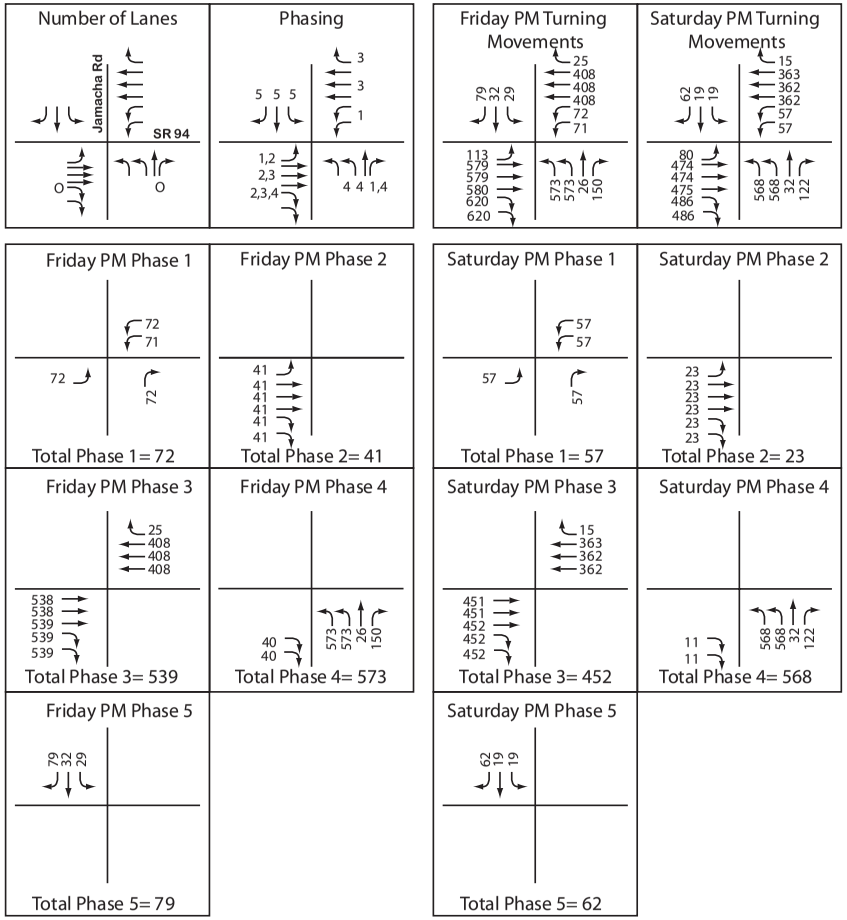
Intersection Name: SR 94 & Jamacha Blvd
Date: April 16, 2014
Scenario: Existing with Casino Friday/Saturday with Project



Friday PM TOTAL= 1191
Friday PM LOS= Below Capacity

Saturday PM TOTAL= 986
Saturday PM LOS= Below Capacity

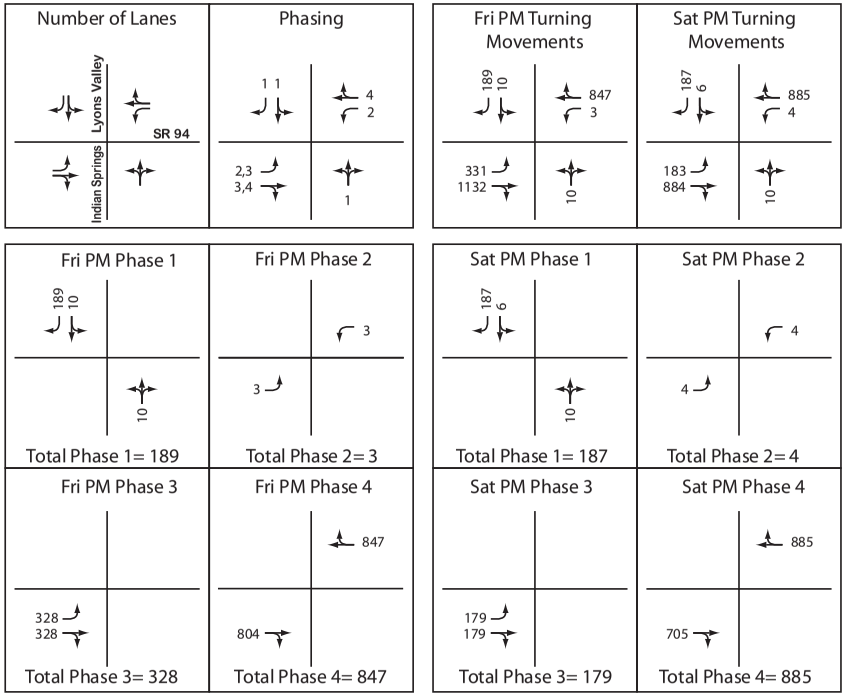
Intersection Name: SR 94 & Jamacha Rd
Date: April 16, 2014
Scenario: Existing with Casino Friday/Saturday with Project



Friday PM TOTAL= 1304
Friday PM LOS= Approaching Capacity

Saturday PM TOTAL= 1162
Saturday PM LOS= Below Capacity

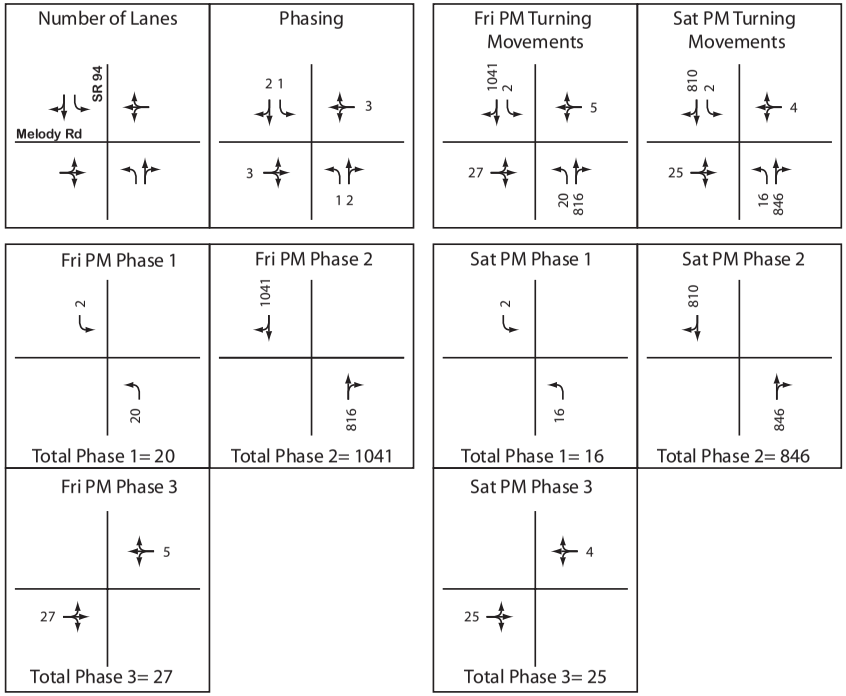
Intersection Name: SR 94 & Lyons Valley Rd/Indian Springs Dr
Date: September 3, 2013
Scenario: Existing Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL= 1,367
Fri PM LOS= Approaching Capacity

Sat PM TOTAL= 1,255
Sat PM LOS= Below Capacity

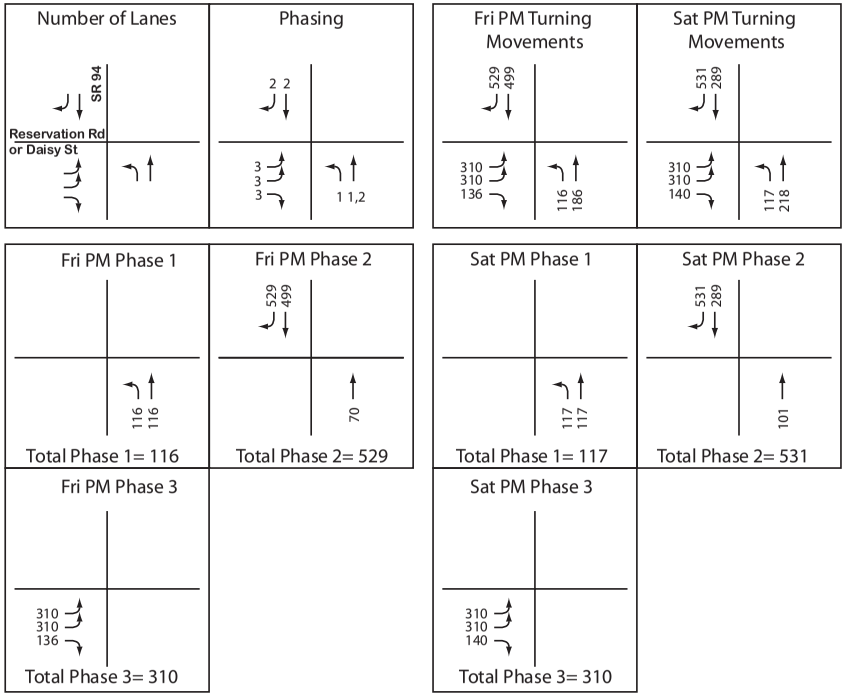
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Existing Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL = 1,088
Fri PM LOS = Below Capacity

Sat PM TOTAL = 887
Sat PM LOS= Below Capacity

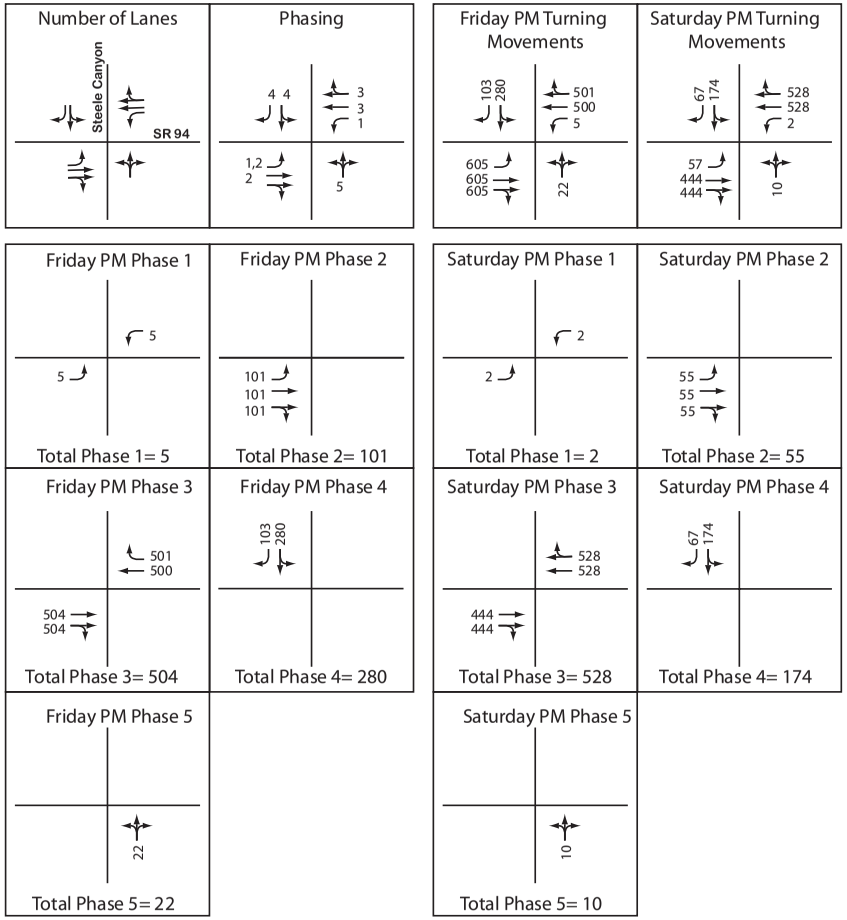
Intersection Name: SR 94 & Resevation Rd
Date: September 3, 2013
Scenario: Existing Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL = 955
Fri PM LOS = Below Capacity

Sat PM TOTAL = 958
Sat PM LOS= Below Capacity

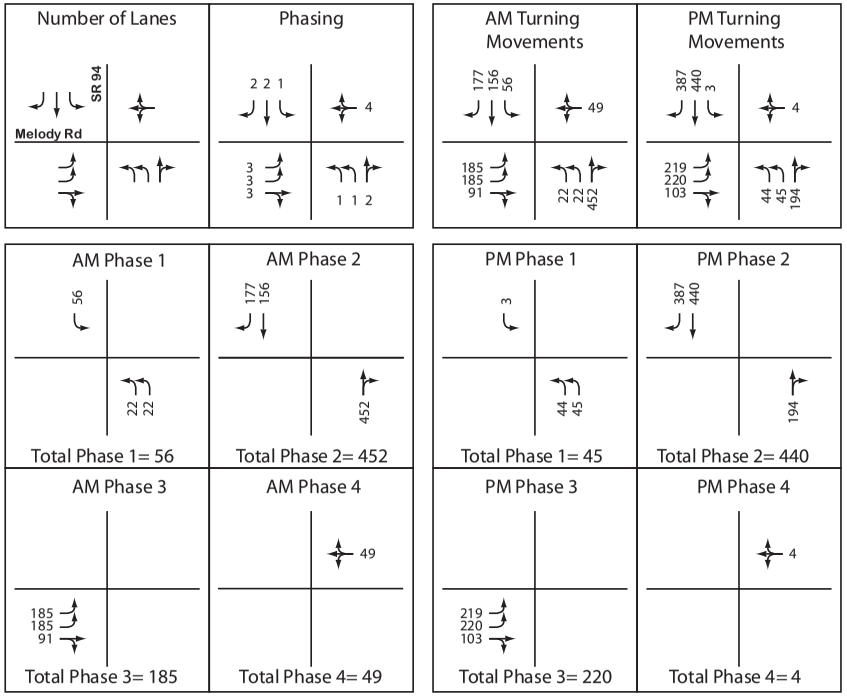
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Existing with Casino Friday/Saturday Plus Project



Friday PM TOTAL= 912
Friday PM LOS= Below Capacity

Saturday PM TOTAL= 769
Saturday PM LOS= Below Capacity

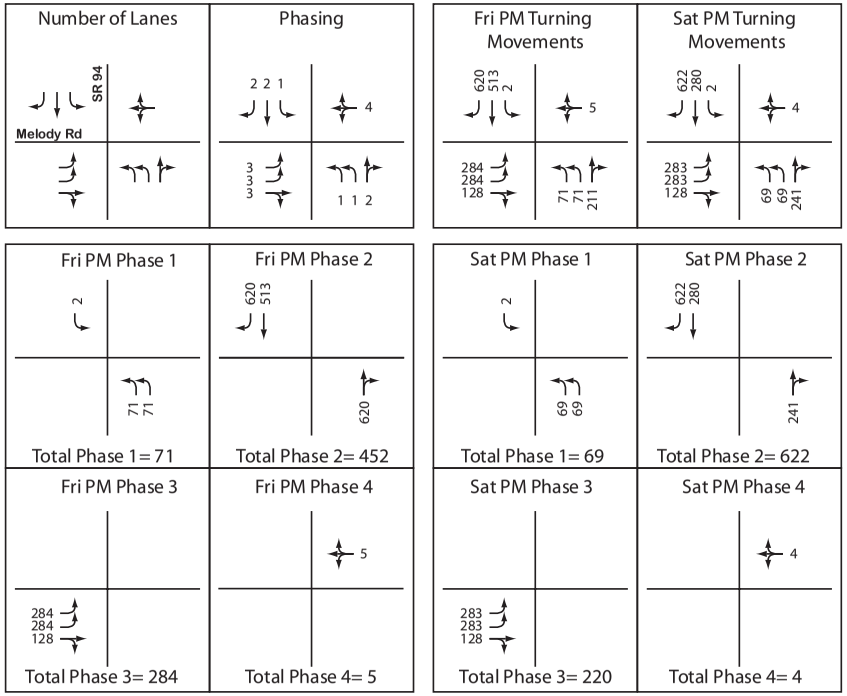
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Existing Weekday with Project Alternative 3



AM TOTAL = 742
AM LOS = Below Capacity

PM TOTAL = 709
PM LOS= Below Capacity

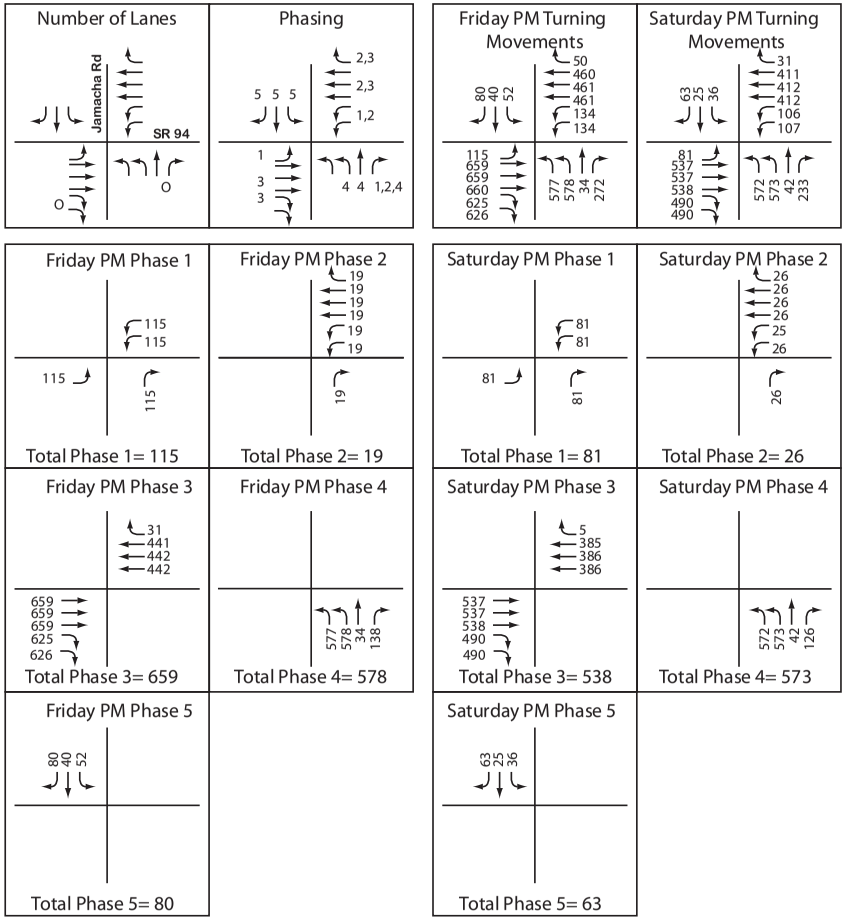
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Existing Friday/Saturday with Project Alternative 3



Fri PM TOTAL = 812
Fri PM LOS = Below Capacity

Sat PM TOTAL = 915
Sat PM LOS= Below Capacity

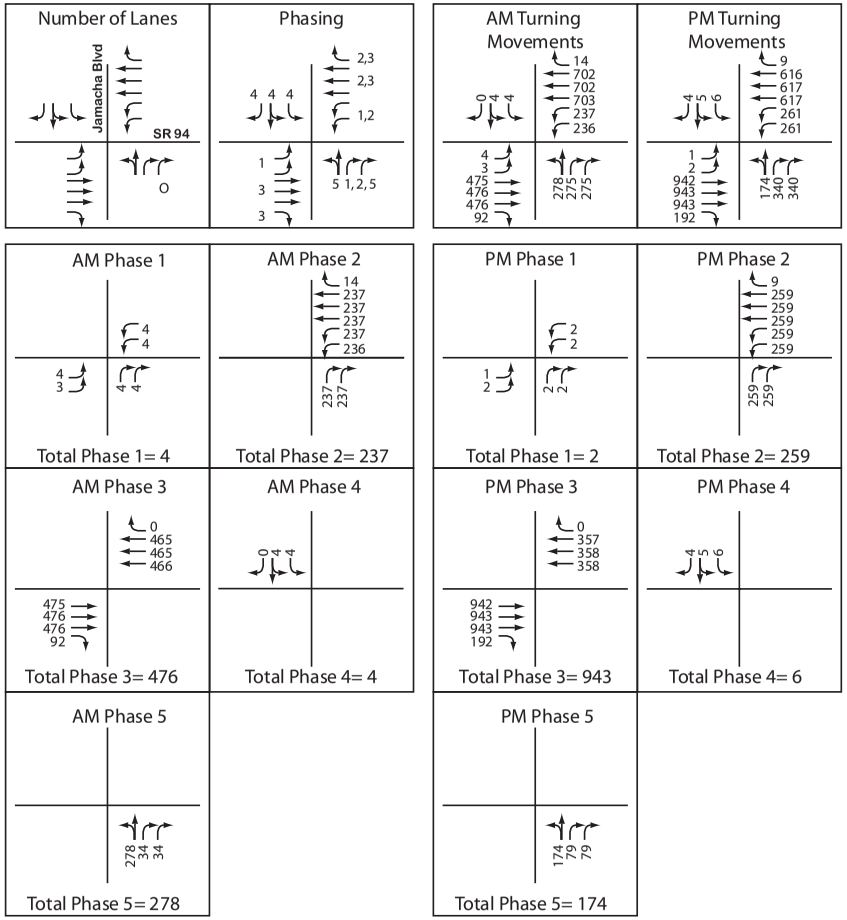
Intersection Name: SR 94 & Jamacha Rd
Date: April 16, 2014
Scenario: Near Term (Year 2015) with Casino Friday/Saturday with Project



Friday PM TOTAL= 1451
Friday PM LOS= Approaching Capacity

Saturday PM TOTAL= 1281
Saturday PM LOS= Approaching Capacity

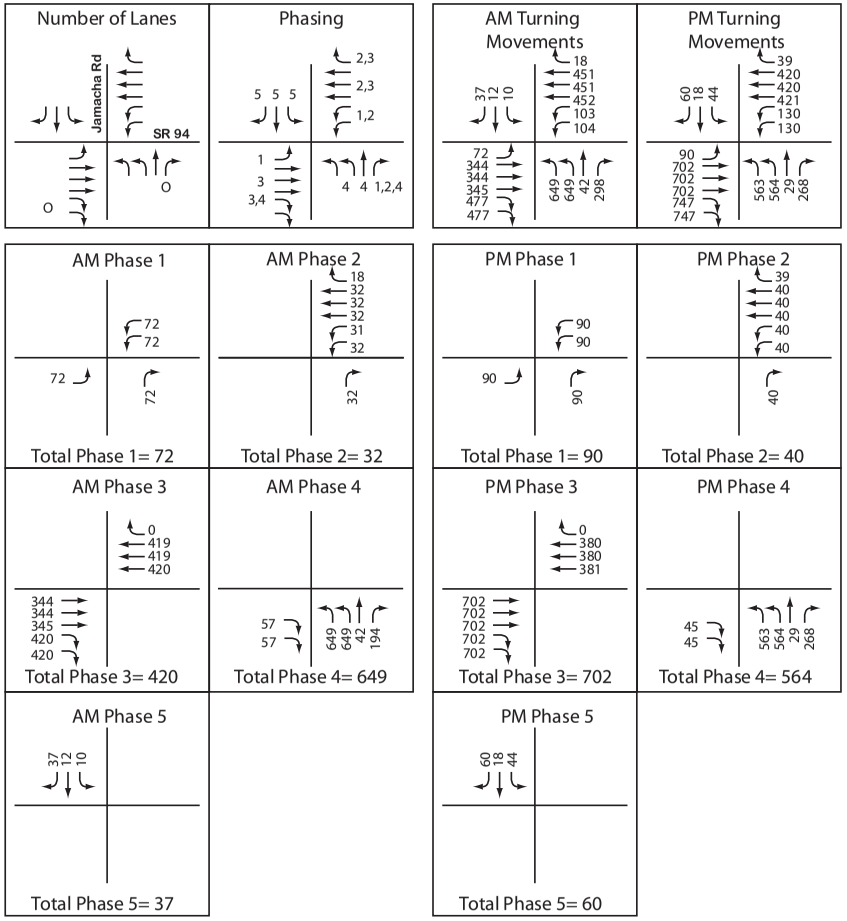
Intersection Name: SR 94 & Jamacha Blvd
Date: April 16, 2014
Scenario: Near Term (Year 2015) with Casino Weekday with Project



AM TOTAL= 999
AM LOS= Below Capacity

PM TOTAL= 1,384
PM LOS= Approaching Capacity

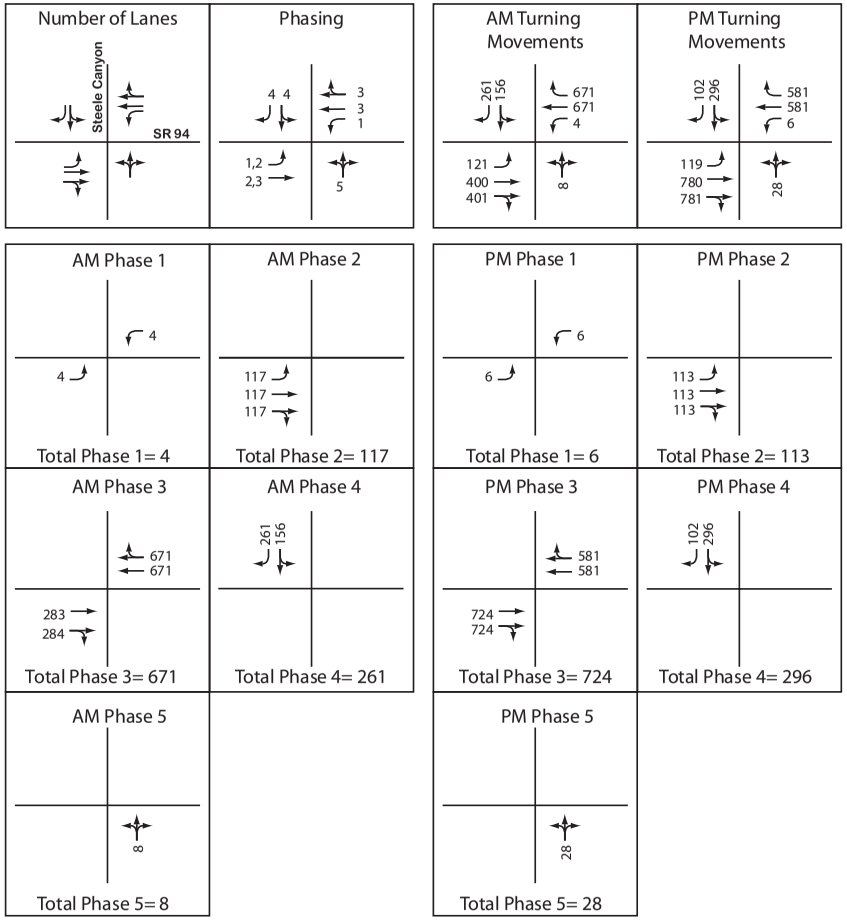
Intersection Name: SR 94 & Jamacha Rd
Date: April 16, 2014
Scenario: Near Term (Year 2015) with Casino Weekday with Project



AM TOTAL= 1210
AM LOS= Approaching Capacity

PM TOTAL= 1050
PM LOS= Below Capacity

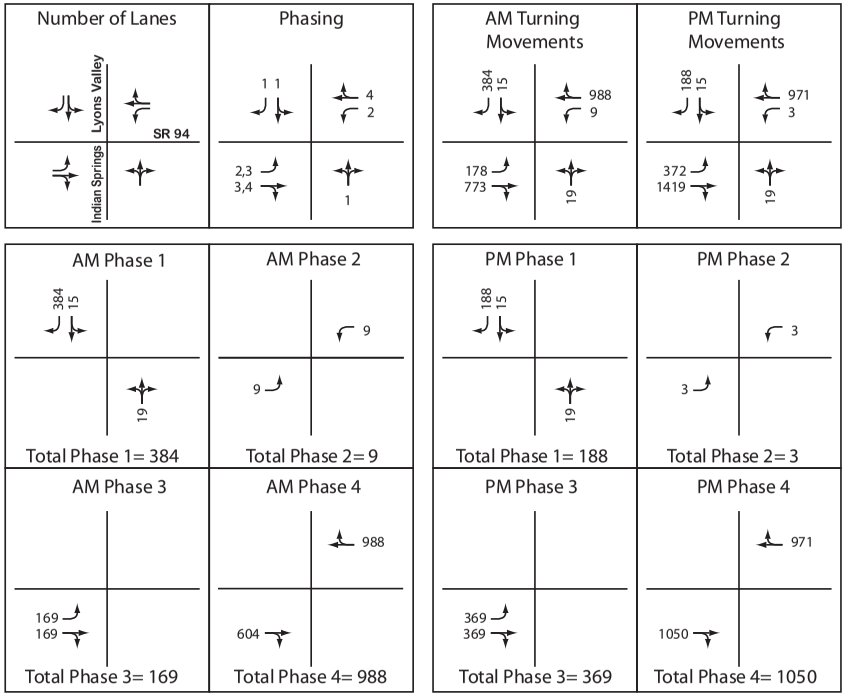
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Near Term (No Build) No Build Weekday with Project



AM TOTAL= 1061
AM LOS= Above Capacity

PM TOTAL= 1167
PM LOS= Above Capacity

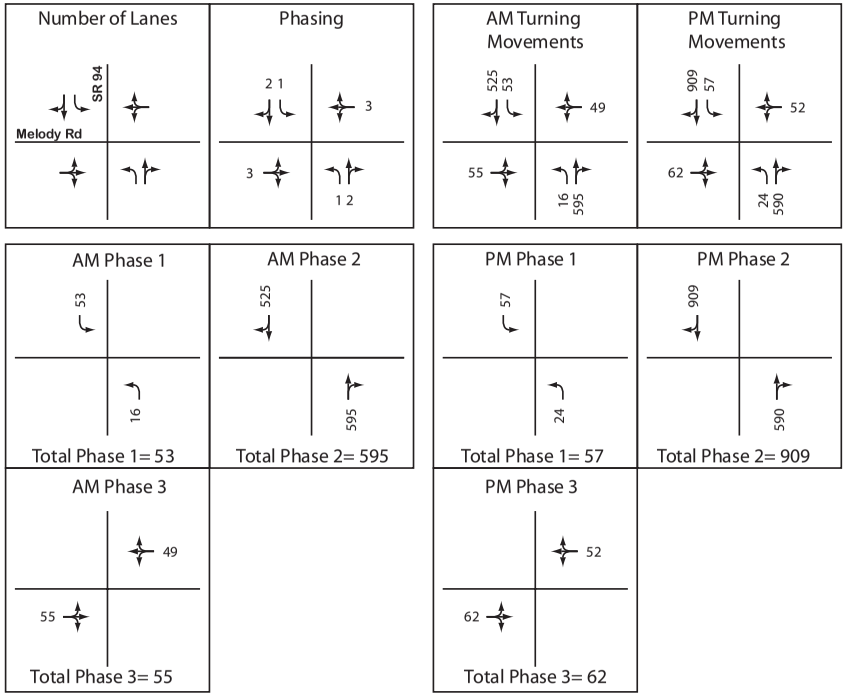
Intersection Name: SR 94 & Lyons Valley Rd/Indian Springs Dr
Date: August 30, 2013
Scenario: Near-Term (Year 2015) Weekday with Project Alternatives 1-2



AM TOTAL = 1,550
AM LOS = Above Capacity

PM TOTAL = 1,610
PM LOS= Above Capacity

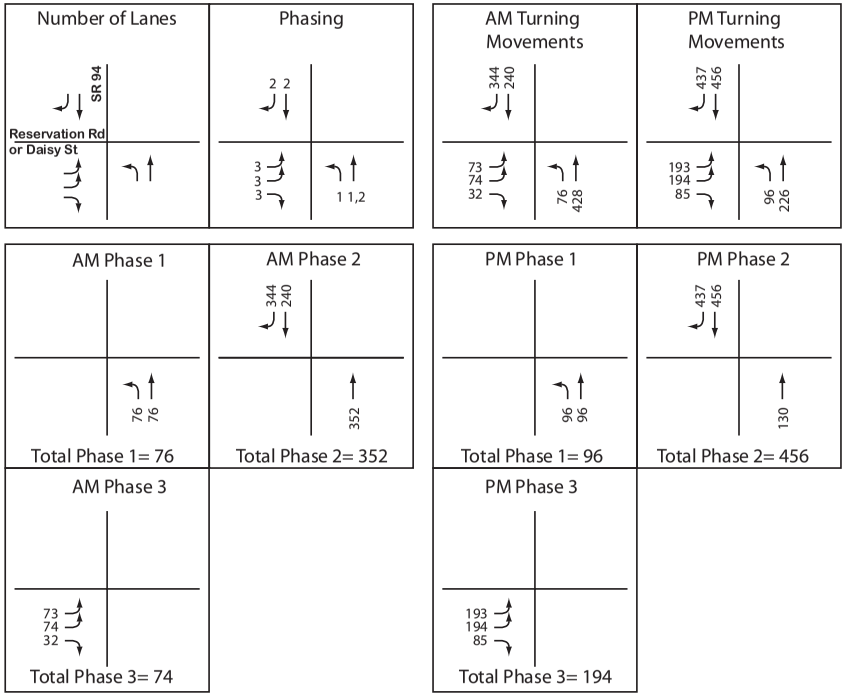
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Near Term (Year 2015) Weekday with Project Alternatives 1-2



AM TOTAL = 703
AM LOS = Below Capacity

PM TOTAL = 1,028
PM LOS= Below Capacity

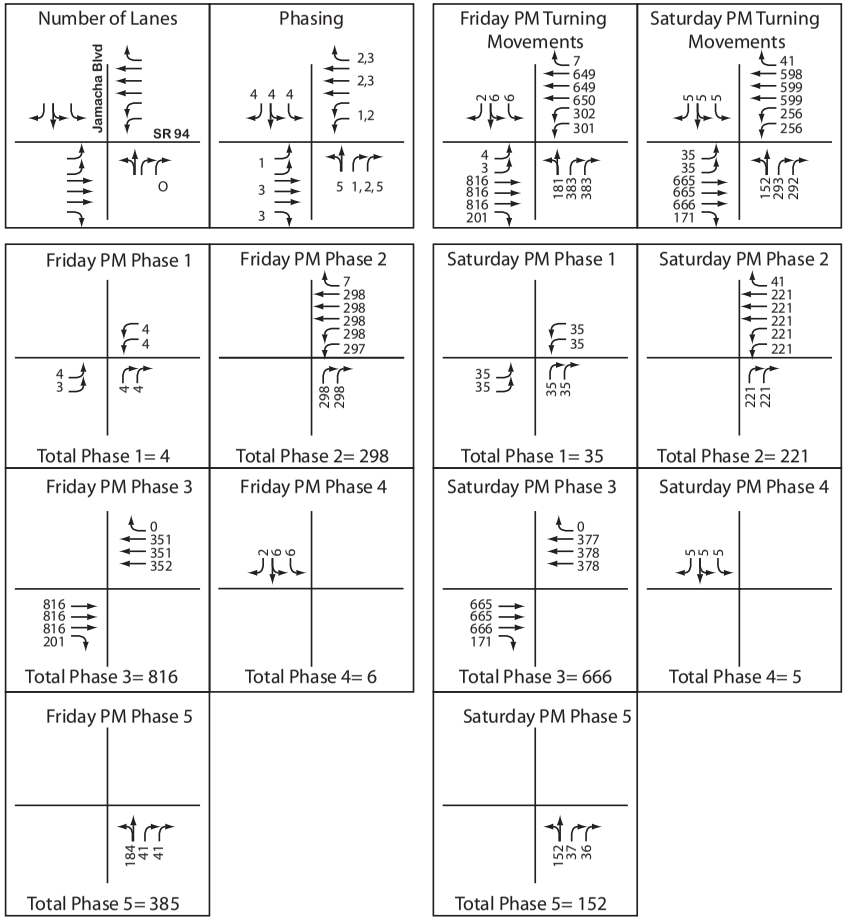
Intersection Name: SR 94 & Resevation Rd
Date: September 3, 2013
Scenario: Near Term (Year 2015) Weekday with Project Alternatives 1-2



AM TOTAL = 502
AM LOS = Below Capacity

PM TOTAL = 746
PM LOS= Below Capacity

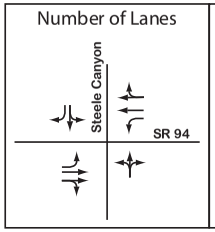
Intersection Name: SR 94 & Jamacha Blvd
Date: April 16, 2014
Scenario: Near Term (Year 2015) with Casino Friday/Saturday with Project

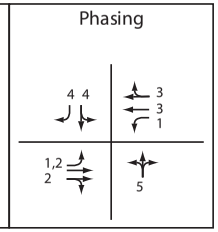


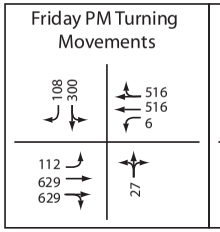
Friday PM TOTAL= 1308
Friday PM LOS= Approaching Capacity

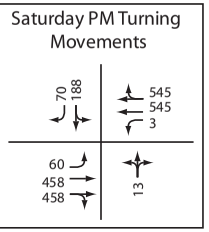
Saturday PM TOTAL= 1079
Saturday PM LOS= Below Capacity

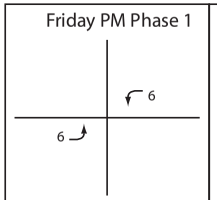
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Near Term (Year 2015) No Build Friday/Saturday with Project

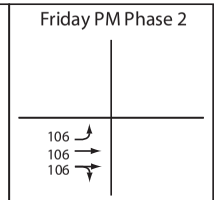


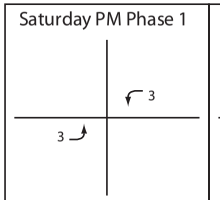


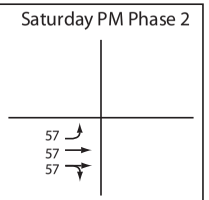


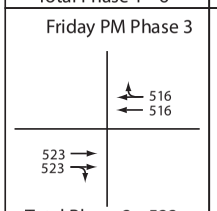


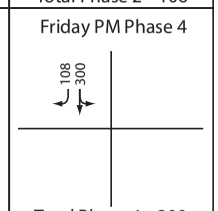


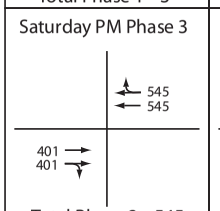


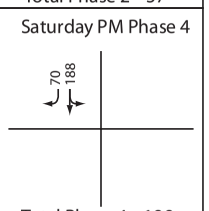


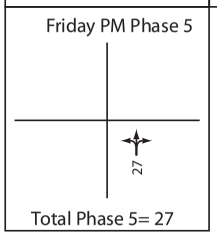


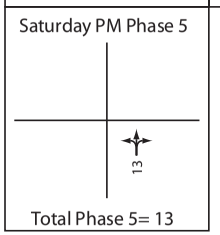








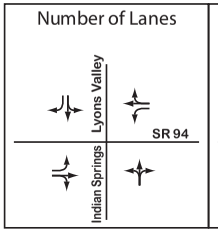


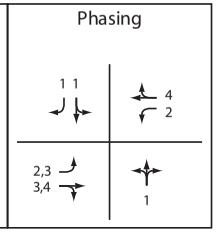


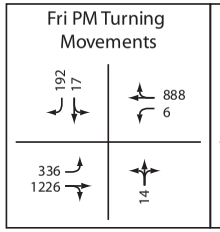
Friday PM TOTAL= 962
Friday PM LOS= Below Capacity

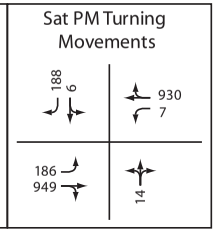
Saturday PM TOTAL= 806
Saturday PM LOS= Below Capacity

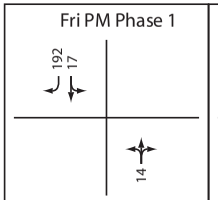
Intersection Name: SR 94 & Lyons Valley Rd/Indian Springs Dr
Date: September 3, 2013
Scenario: Near Term (Year 2015) Friday/Saturday with Project Alternatives 1-2

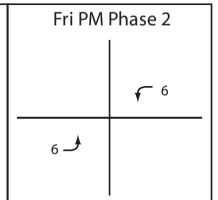


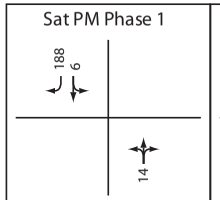


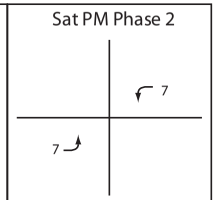


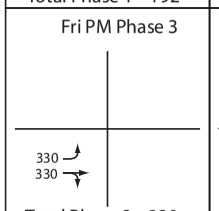


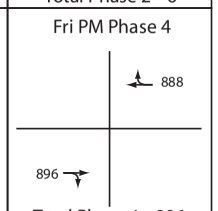


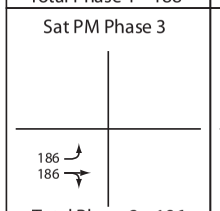


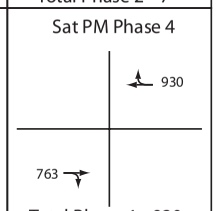








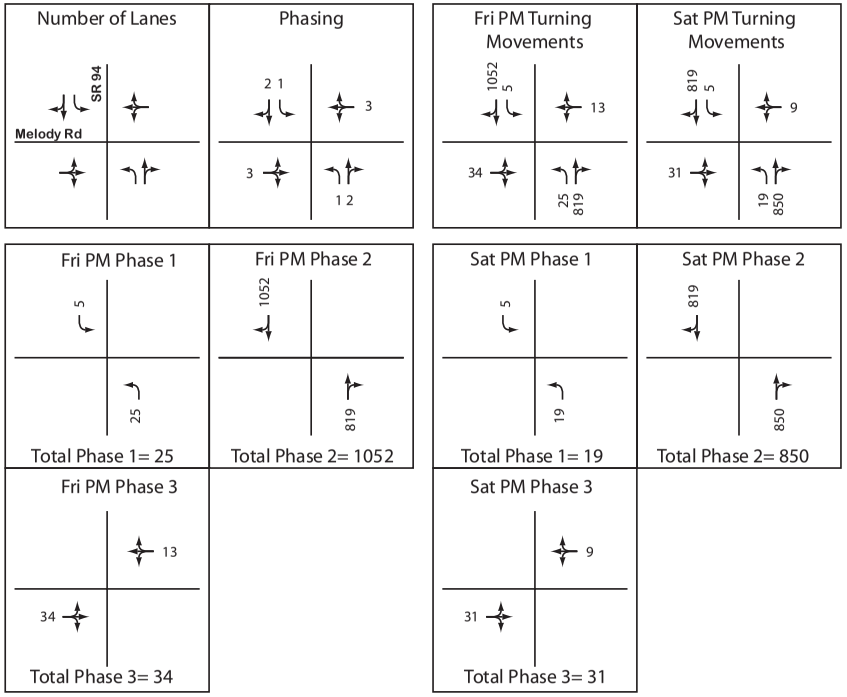




Fri PM TOTAL= 1,424
Fri PM LOS= Approaching Capacity

Sat PM TOTAL= 1,311
Sat PM LOS= Approaching Capacity

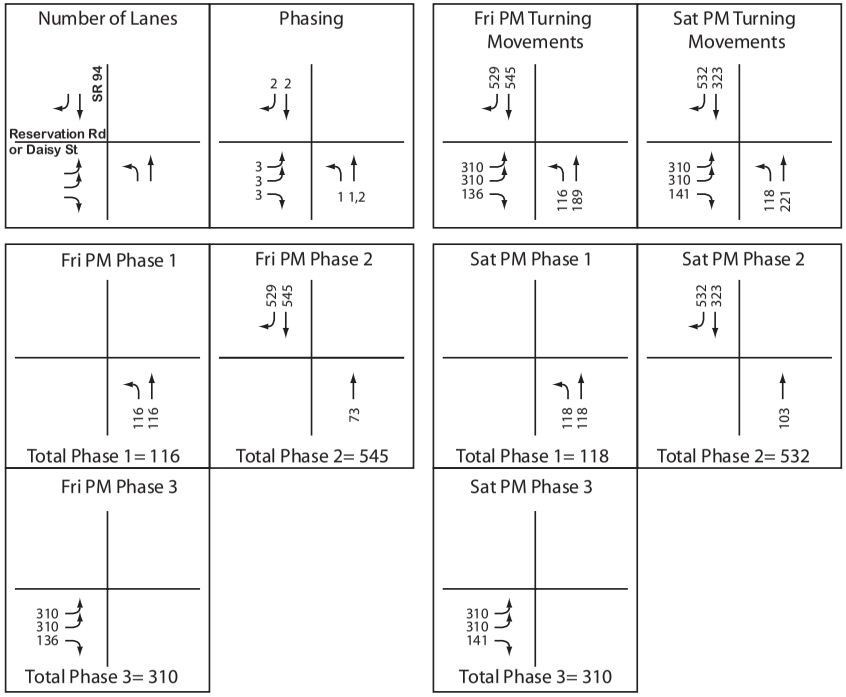
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Near Term (Year 2015) Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL = 1,111
Fri PM LOS = Below Capacity

Sat PM TOTAL = 900
Sat PM LOS= Below Capacity

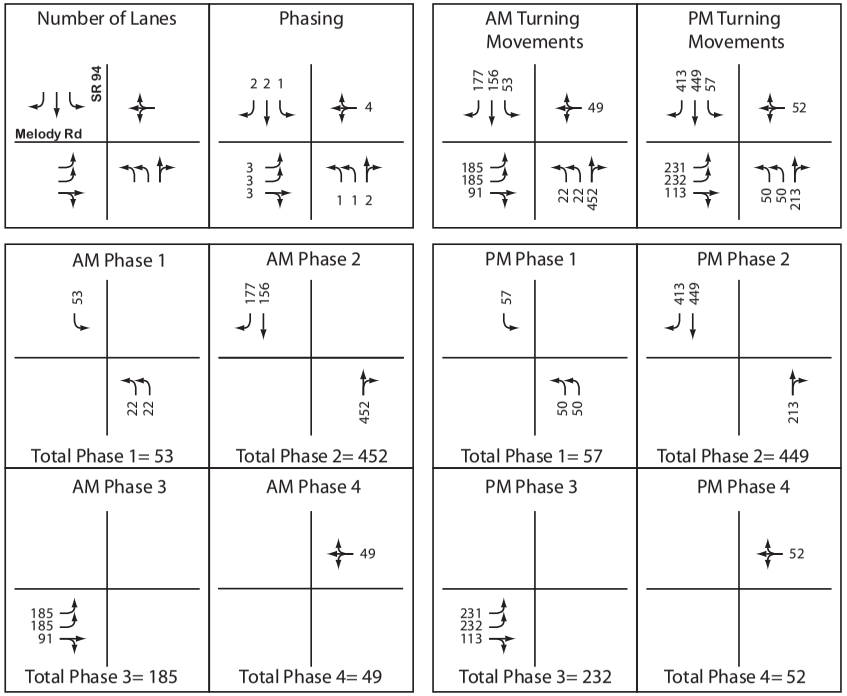
Intersection Name: SR 94 & Resevation Rd
Date: September 3, 2013
Scenario: Near Term (Year 2015) Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL = 971
Fri PM LOS = Below Capacity

Sat PM TOTAL = 960
Sat PM LOS= Below Capacity

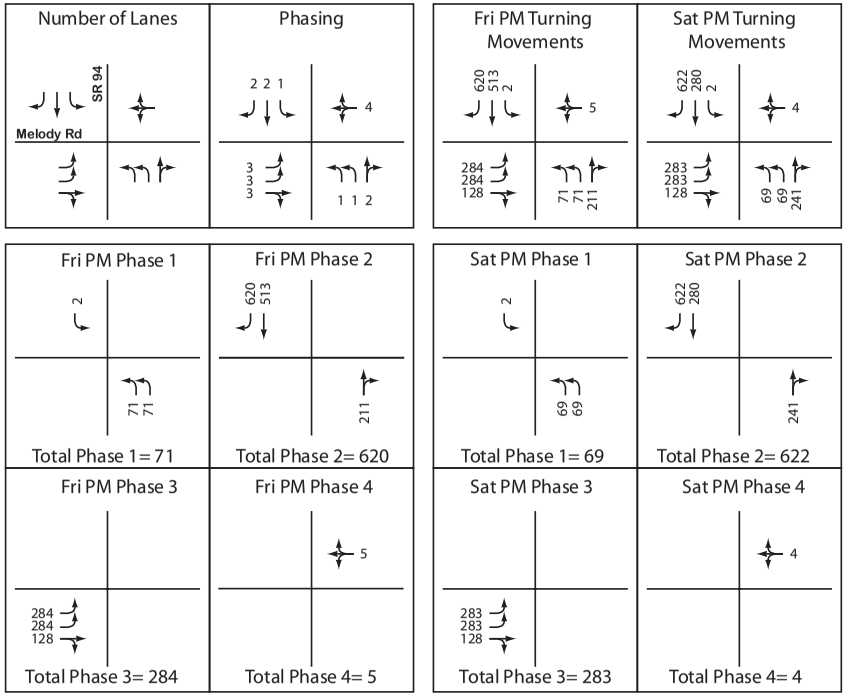
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Near Term (Year 2015) Weekday with Project Alternative 3



AM TOTAL = 739
AM LOS = Below Capacity

PM TOTAL = 790
PM LOS= Below Capacity

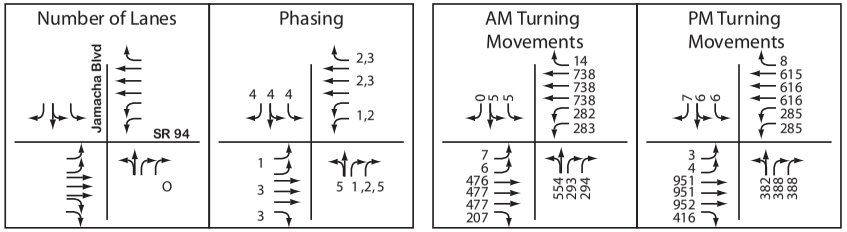
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Near Term (Year 2015) Friday/Saturday with Project Alternative 3

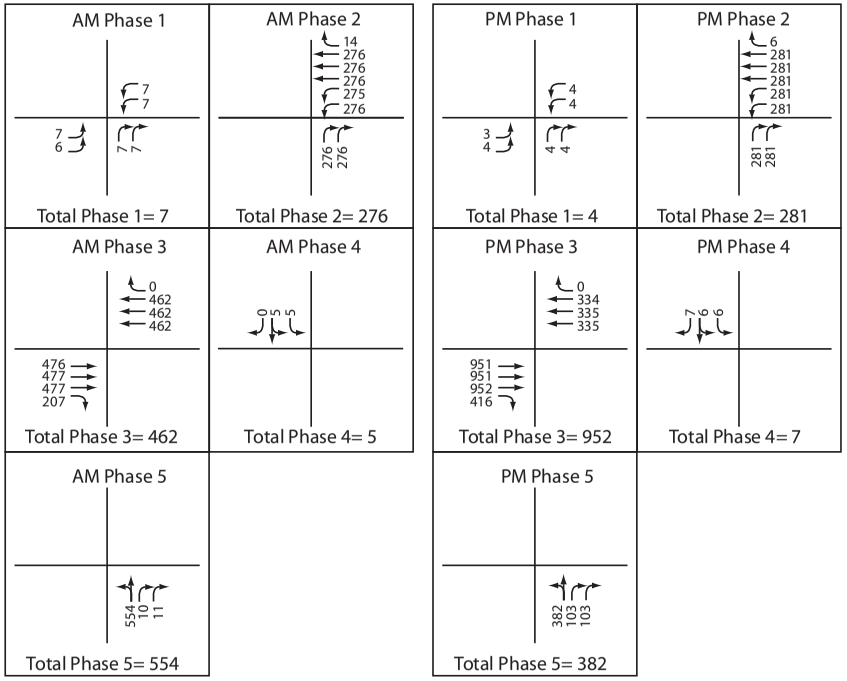


Fri PM TOTAL = 980
Fri PM LOS = Below Capacity

Sat PM TOTAL = 978
Sat PM LOS= Below Capacity

Intersection Name: SR 94 & Jamacha Blvd
Date: April 16, 2014
Scenario: Horizon Year (Year 2035) with Casino Weekday with Project

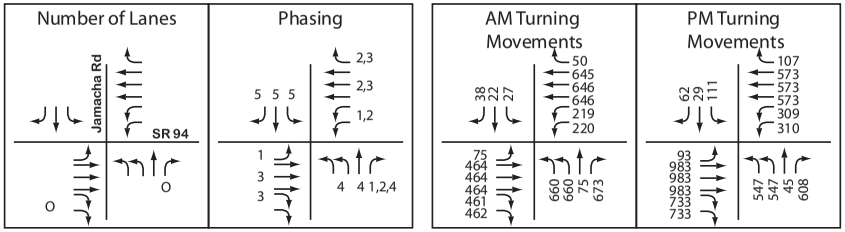


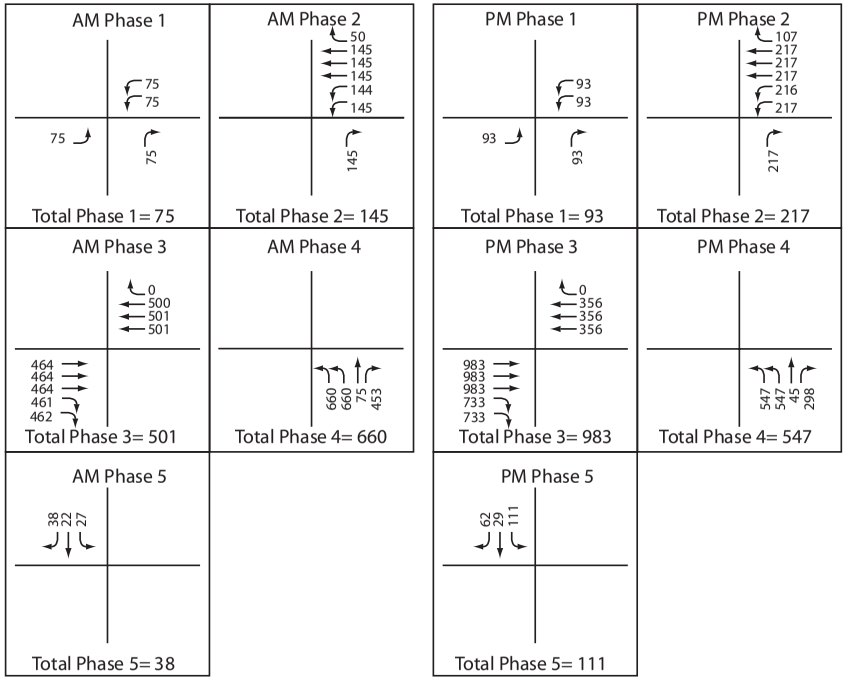


AM TOTAL= 1304
AM LOS= Approaching Capacity

PM TOTAL= 1626
PM LOS= Above Capacity

Intersection Name: SR 94 & Jamacha Rd
Date: April 16, 1014
Scenario: Horizon Year (Year 2035) with Casino Weekday with Project

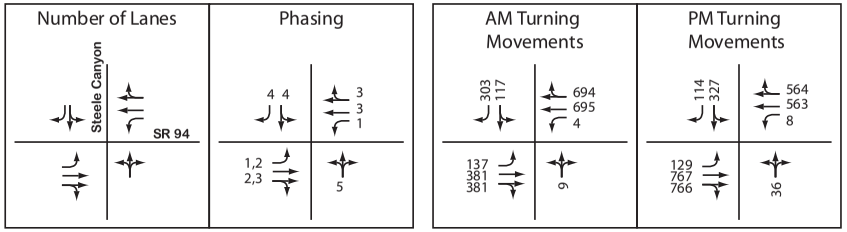


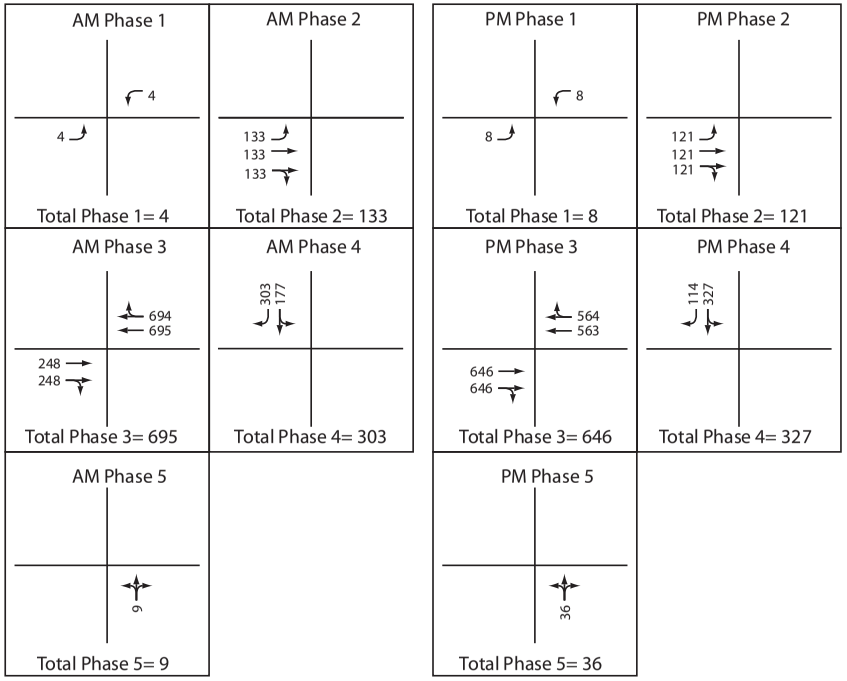


AM TOTAL= 1419
AM LOS= Approaching Capacity

PM TOTAL= 1951
PM LOS= Above Capacity

Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Horizon Year (Year 2035) No Build Weekday with Project

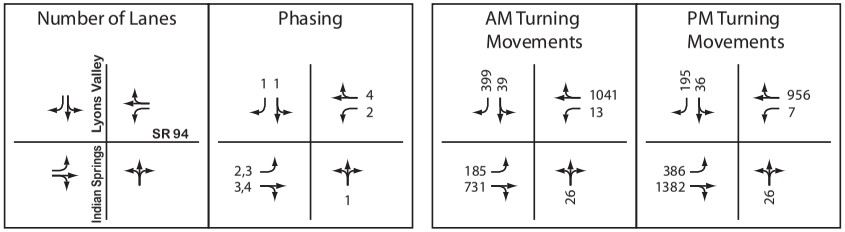


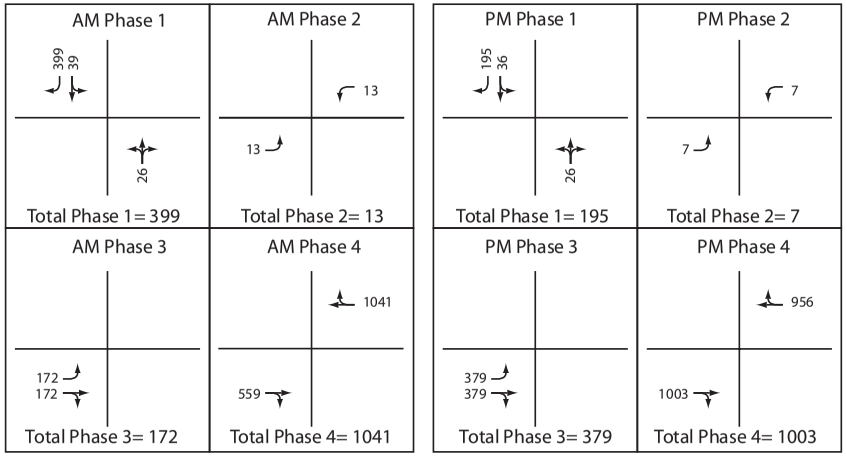


AM TOTAL= 1144
AM LOS= Below Capacity

PM TOTAL= 1138
PM LOS= Below Capacity

Intersection Name: SR 94 & Lyons Valley Rd/Indian Springs Dr
Date: August 30, 2013
Scenario: Horizon Year (Year 2035) Weekday with Project Alternatives 1-2

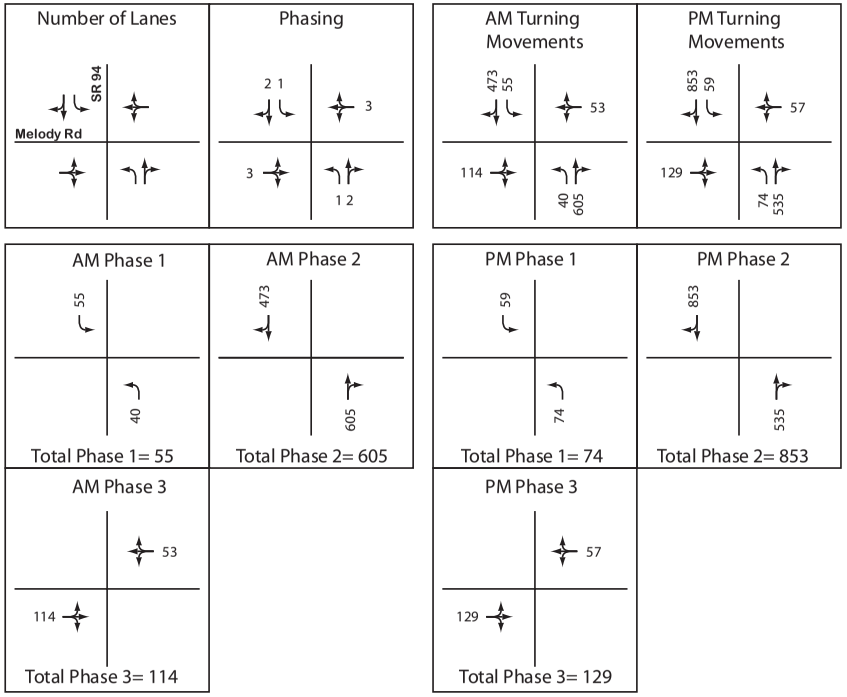




AM TOTAL = 1,625
AM LOS = Above Capacity

PM TOTAL = 1,584
PM LOS= Above Capacity

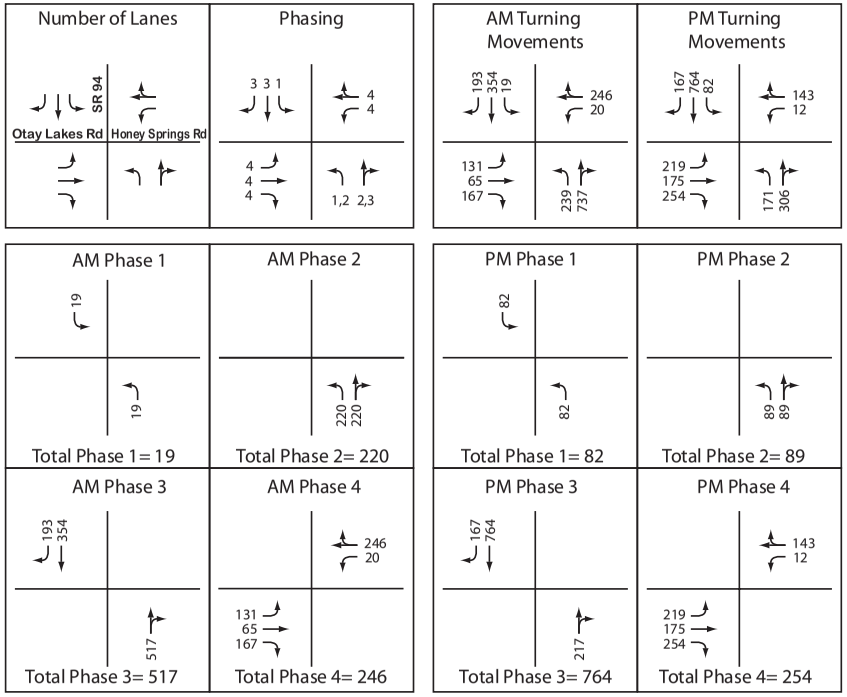
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Weekday with Project Alternatives 1-2



AM TOTAL = 774
AM LOS = Below Capacity

PM TOTAL = 1,056
PM LOS= Below Capacity

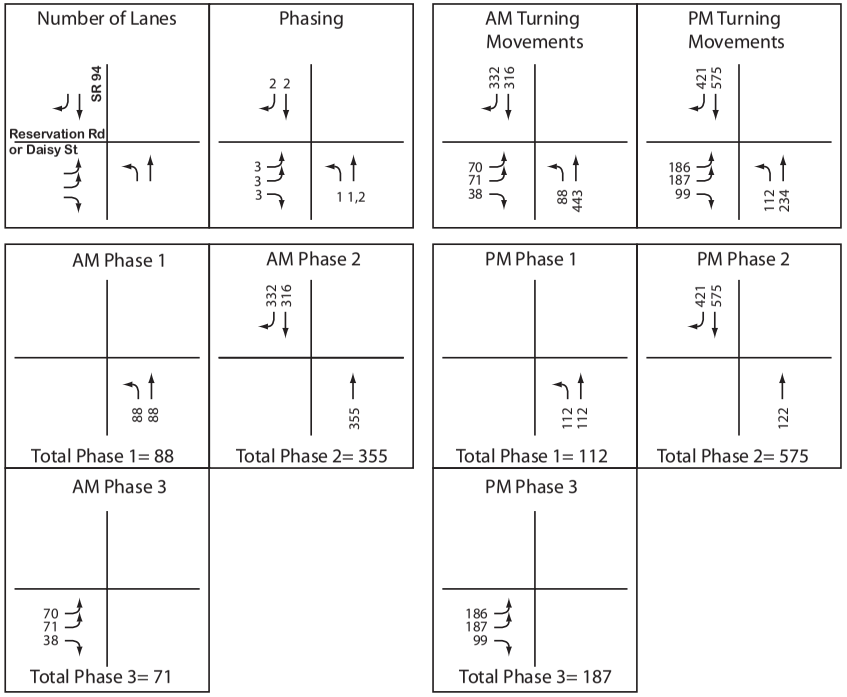
Intersection Name: SR 94 & Otay Lakes Rd/Honey Springs Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Weekday with Project Alternatives 1-2



AM TOTAL = 1,002
AM LOS = Below Capacity

PM TOTAL = 1,189
PM LOS= Below Capacity

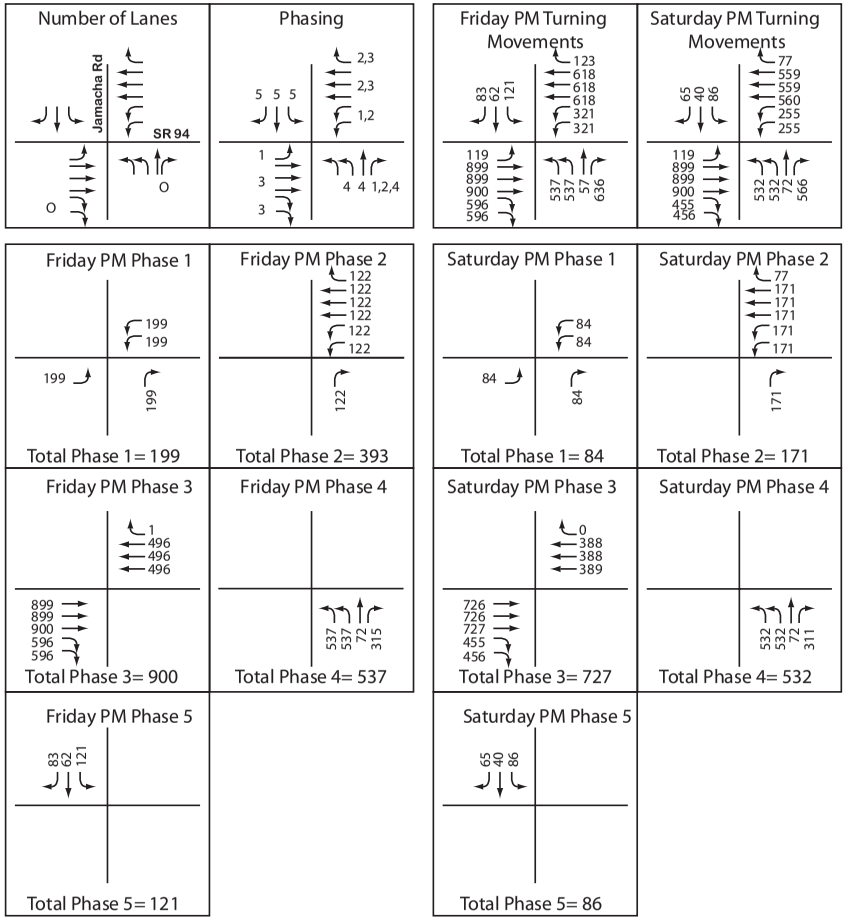
Intersection Name: SR 94 & Resevation Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Weekday with Project Alternatives 1-2



AM TOTAL = 514
AM LOS = Below Capacity

PM TOTAL = 874
PM LOS= Below Capacity

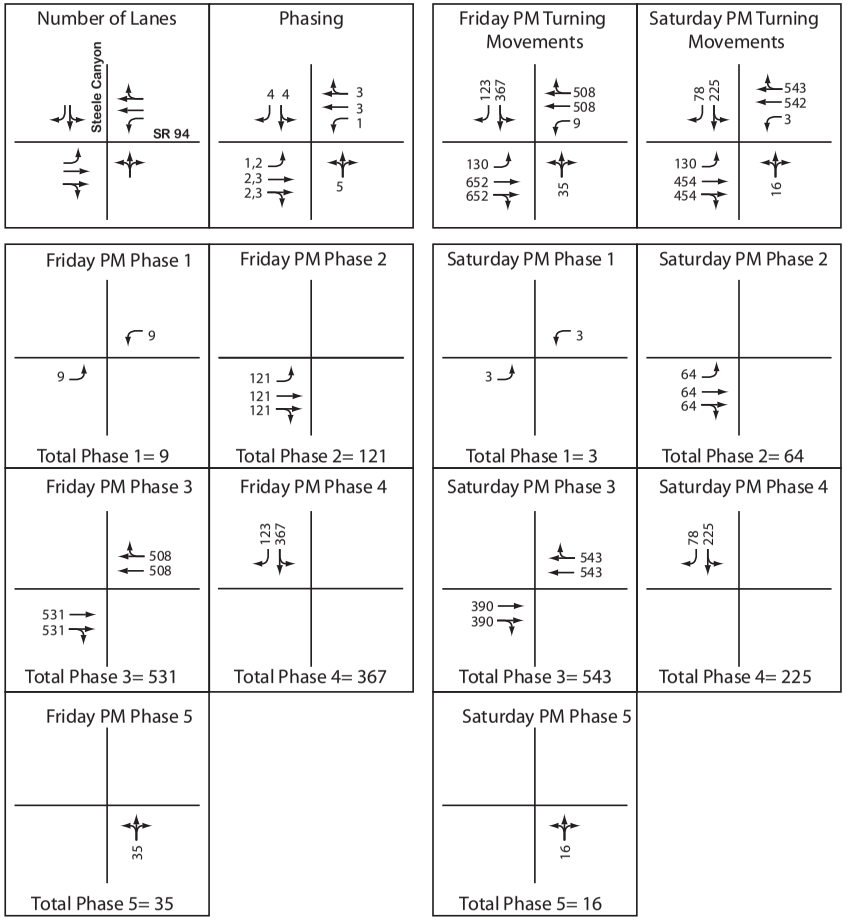
Intersection Name: SR 94 & Jamacha Rd
Date: April 16, 2014
Scenario: Horizon Year (Year 2035) with Casino Friday/Saturday with Project



Friday PM TOTAL= 2150
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1600
Saturday PM LOS= Above Capacity

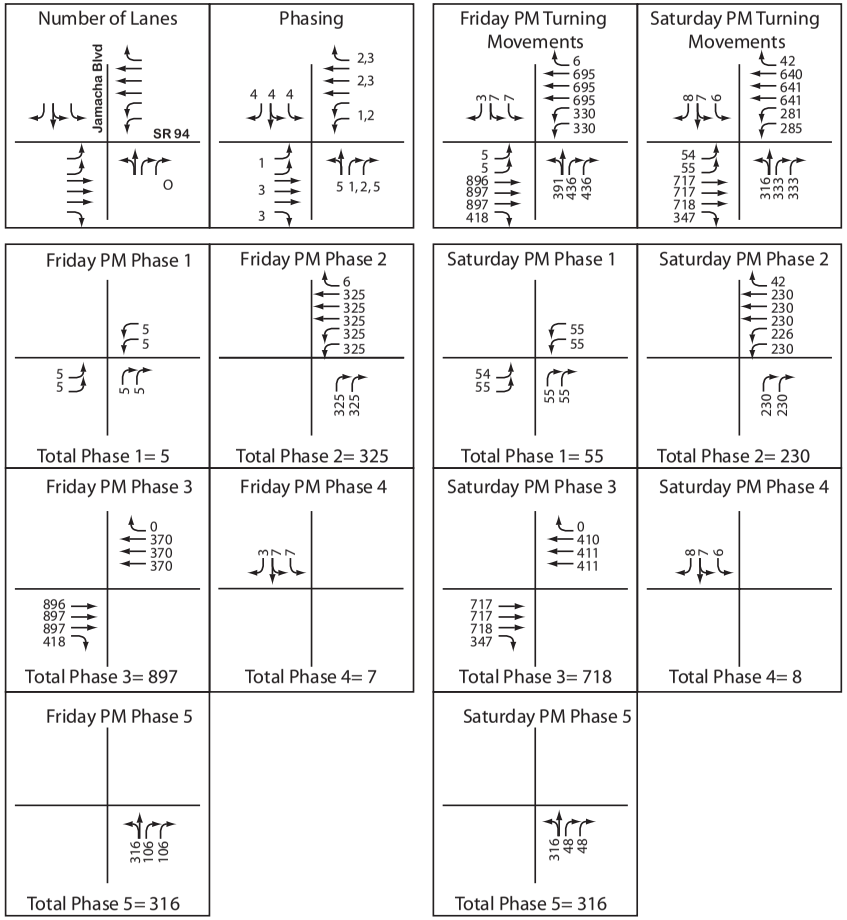
Intersection Name: SR 94 & Steele Canyon Rd
Date: August 27, 2013
Scenario: Horizon Year (Year 2035) No Build Friday/Saturday with Project



Friday PM TOTAL= 1063
Friday PM LOS= Below Capacity

Saturday PM TOTAL= 851
Saturday PM LOS= Approaching Capacity

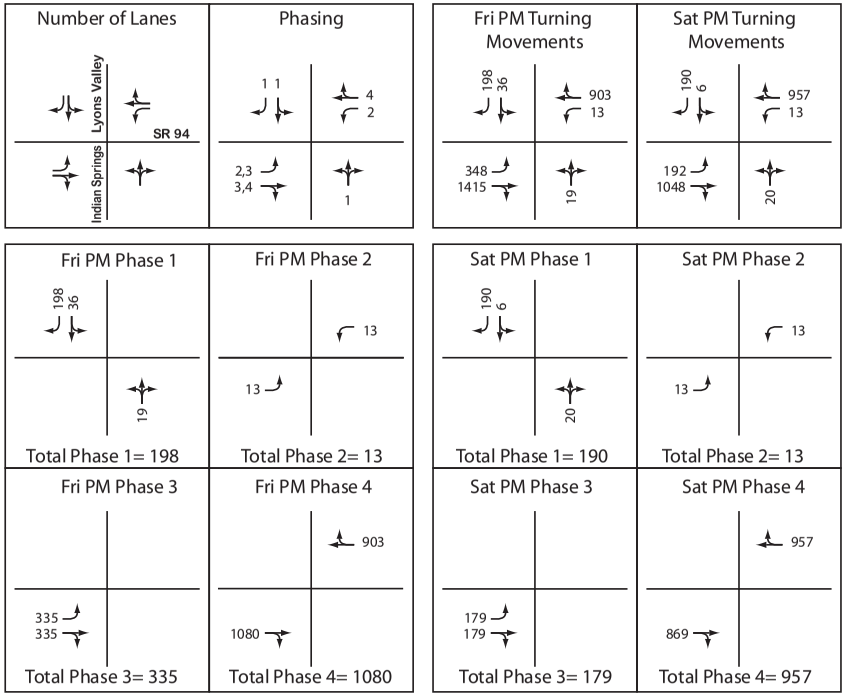
Intersection Name: SR 94 & Jamacha Blvd
Date: April 16, 2014
Scenario: Horizon Year (Year 2035) with Casino Friday/Saturday with Project



Friday PM TOTAL= 1550
Friday PM LOS= Above Capacity

Saturday PM TOTAL= 1327
Saturday PM LOS= Approaching Capacity

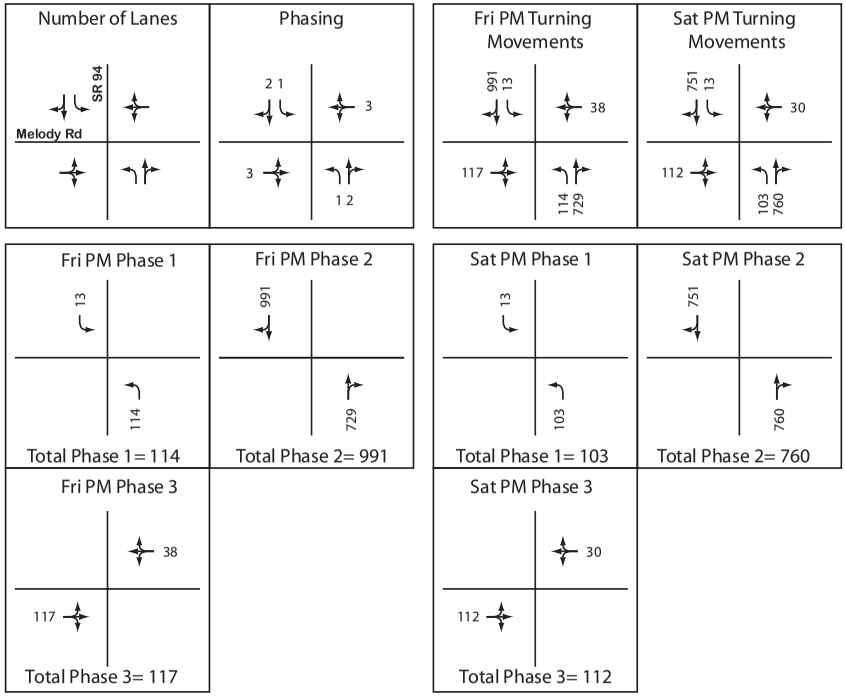
Intersection Name: SR 94 & Lyons Valley Rd/Indian Springs Dr
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL= 1,626
Fri PM LOS= Above Capacity

Sat PM TOTAL= 1,339
Sat PM LOS= Above Capacity

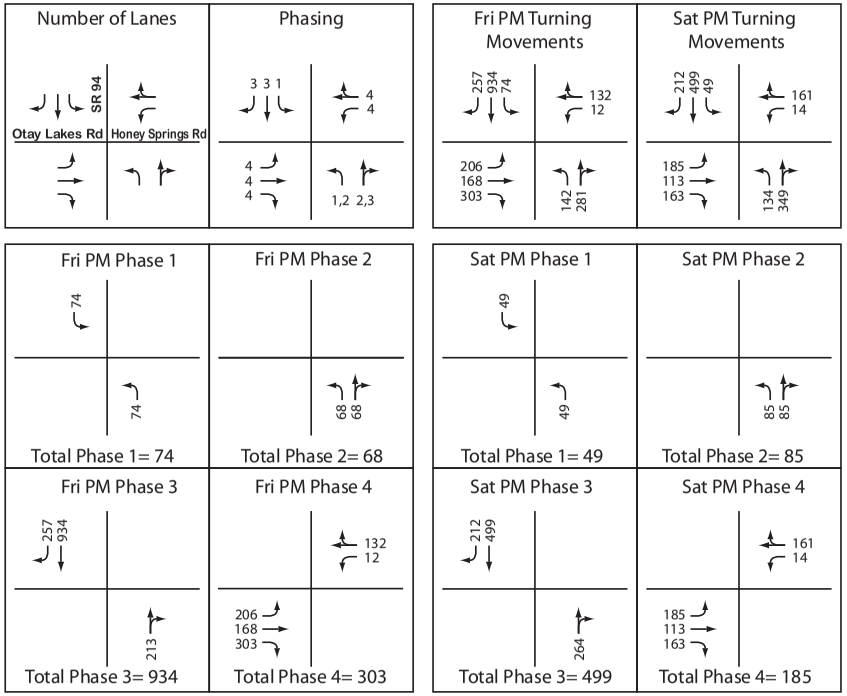
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL = 1,222
Fri PM LOS = Approaching Capacity

Sat PM TOTAL = 975
Sat PM LOS= Below Capacity

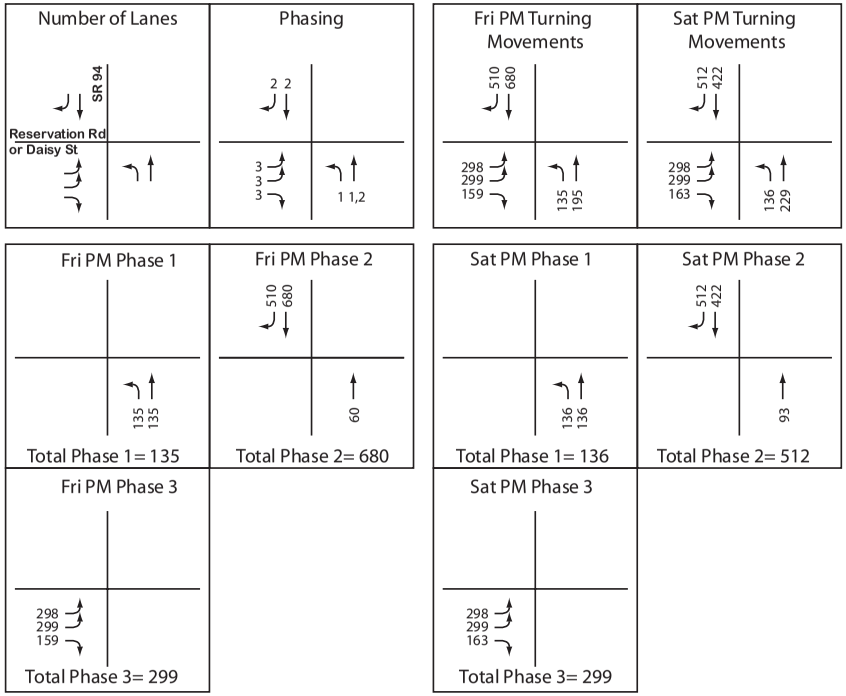
Intersection Name: SR 94 & Otay Lakes Rd/Honey Springs Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Friday/Saturday with Project Alternatives 1-2



Friday PM TOTAL = 1,379
Friday PM LOS = Approaching Capacity

Saturday PM TOTAL = 818
Saturday PM LOS= Below Capacity

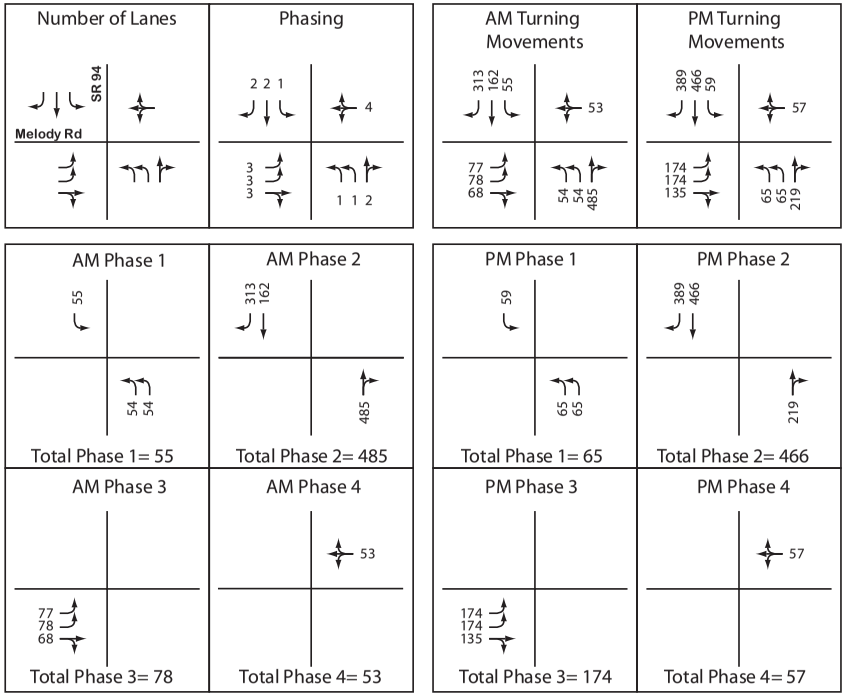
Intersection Name: SR 94 & Resevation Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Friday/Saturday with Project Alternatives 1-2



Fri PM TOTAL = 1,114
Fri PM LOS = Below Capacity

Sat PM TOTAL = 947
Sat PM LOS= Below Capacity

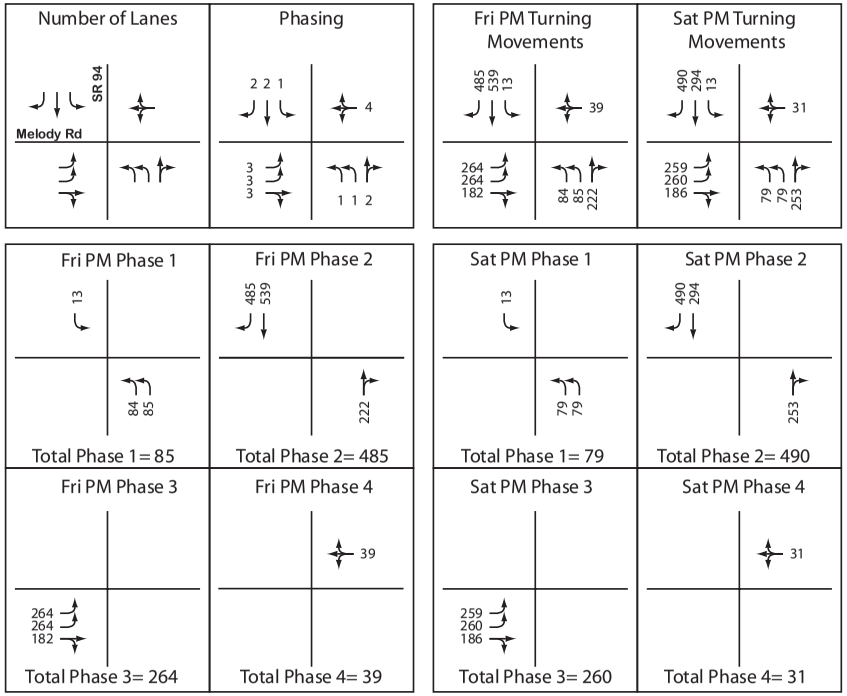
Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Weekday with Project Alternative 3



AM TOTAL = 671
AM LOS = Below Capacity

PM TOTAL = 762
PM LOS= Below Capacity

Intersection Name: SR 94 & Melody Rd
Date: September 3, 2013
Scenario: Horizon Year (Year 2035) Friday/Saturday with Project Alternative 3



Fri PM TOTAL = 873
Fri PM LOS = Below Capacity

Sat PM TOTAL = 860
Sat PM LOS= Below Capacity

APPENDIX G

- Peak-Hour Arterial Analysis Worksheets

Arterial Level of Service: EB SR 94 (Campo Rd)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	4.2	99.8	1.46	52.7	A
Jamacha Blvd.	I	55	38.0	18.8	56.8	0.52	33.0	C
SR 94 (Campo Rd)	I	55	38.1	1.3	39.4	0.58	53.2	A
Cougar Canyon Rd.	I	55	78.0	4.2	82.2	1.19	52.2	A
Steele Canyon Rd.	I	55	81.2	9.4	90.6	1.24	49.3	A
Proctor Valley Rd.	I	55	143.1	9.0	152.1	2.19	51.7	A
Total	I		474.0	46.9	520.9	7.18	49.6	A

Arterial Level of Service: WB SR 94 (Campo Rd)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	339.9	13.5	353.4	5.19	52.9	A
Steele Canyon Rd.	I	55	143.1	31.4	174.5	2.19	45.1	A
Cougar Canyon Rd.	I	55	81.2	25.4	106.6	1.24	41.9	B
Jamacha Rd.	I	55	78.0	28.0	106.0	1.19	40.5	B
Jamacha Blvd.	I	55	38.1	8.5	46.6	0.58	45.0	A
Via Mercado	I	55	38.0	22.2	60.2	0.52	31.1	C
Total	I		718.3	129.0	847.3	10.91	46.4	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	13.0	108.6	1.46	48.4	A
Jamacha Blvd.	I	55	38.0	33.1	71.1	0.52	26.4	D
SR 94	I	55	38.1	4.3	42.4	0.58	49.4	A
Cougar Canyon Rd.	I	55	78.0	12.2	90.2	1.19	47.5	A
Steele Canyon Rd.	I	55	81.2	28.0	109.2	1.24	40.9	B
Proctor Valley Rd.	I	55	143.3	13.0	156.3	2.19	50.4	A
Total	I		474.2	103.6	577.8	7.19	44.8	A

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	339.9	7.8	347.7	5.19	53.8	A
Steele Canyon Rd.	I	55	143.3	22.0	165.3	2.19	47.7	A
Cougar Canyon Rd.	I	55	81.2	11.3	92.5	1.24	48.3	A
Jamacha Rd.	I	55	78.0	40.6	118.6	1.19	36.2	B
Jamacha Blvd.	I	55	38.1	4.7	42.8	0.58	49.0	A
Via Mercado	I	55	38.0	28.0	66.0	0.52	28.4	C
Total	I		718.5	114.4	832.9	10.92	47.2	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	16.8	112.4	1.46	46.8	A
Jamacha Blvd.	I	55	38.0	24.5	62.5	0.52	30.0	C
SR 94	I	55	38.1	2.8	40.9	0.58	51.2	A
Cougar Canyon Rd.	I	55	78.0	11.9	89.9	1.19	47.7	A
Steele Canyon Rd.	I	55	81.2	24.9	106.1	1.24	42.1	A
Proctor Valley Rd.	I	55	143.9	11.3	155.2	2.20	51.0	A
Total	I		474.8	92.2	567.0	7.19	45.7	A

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	340.4	7.9	348.3	5.20	53.7	A
Steele Canyon Rd.	I	55	143.9	22.2	166.1	2.20	47.6	A
Cougar Canyon Rd.	I	55	81.2	12.2	93.4	1.24	47.8	A
Jamacha Rd.	I	55	78.0	43.1	121.1	1.19	35.4	B
Jamacha Blvd.	I	55	38.1	4.8	42.9	0.58	48.8	A
Via Mercado	I	55	38.0	26.4	64.4	0.52	29.1	C
Total	I		719.6	116.6	836.2	10.93	47.1	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	9.6	105.2	1.46	50.0	A
Jamacha Blvd.	I	55	38.0	19.2	57.2	0.52	32.8	C
SR 94	I	55	38.1	1.7	39.8	0.58	52.6	A
Cougar Canyon Rd.	I	55	78.0	15.6	93.6	1.19	45.8	A
Steele Canyon Rd.	I	55	81.2	24.9	106.1	1.24	42.1	A
Proctor Valley Rd.	I	55	143.6	15.1	158.7	2.19	49.8	A
Total	I		474.5	86.1	560.6	7.19	46.2	A

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	340.1	14.2	354.3	5.20	52.8	A
Steele Canyon Rd.	I	55	143.6	31.3	174.9	2.19	45.1	A
Cougar Canyon Rd.	I	55	81.2	16.9	98.1	1.24	45.5	A
Jamacha Rd.	I	55	78.0	32.0	110.0	1.19	39.0	B
Jamacha Blvd.	I	55	38.1	8.6	46.7	0.58	44.9	A
Via Mercado	I	55	38.0	19.9	57.9	0.52	32.4	C
Total	I		719.0	122.9	841.9	10.92	46.7	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	4.8	100.4	1.46	52.4	A
Jamacha Blvd.	I	55	38.0	18.8	56.8	0.52	33.0	C
SR 94	I	55	38.1	2.4	40.5	0.58	51.7	A
Cougar Canyon Rd.	I	55	78.0	5.3	83.3	1.19	51.5	A
Steele Canyon Rd.	I	55	81.2	13.9	95.1	1.24	47.0	A
Proctor Valley Rd.	I	55	144.4	12.7	157.1	2.21	50.6	A
Total	I		475.3	57.9	533.2	7.20	48.6	A

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	339.8	14.3	354.1	5.19	52.8	A
Steele Canyon Rd.	I	55	144.4	64.8	209.2	2.21	38.0	B
Cougar Canyon Rd.	I	55	81.2	26.6	107.8	1.24	41.4	B
Jamacha Rd.	I	55	78.0	30.8	108.8	1.19	39.4	B
Jamacha Blvd.	I	55	38.1	8.6	46.7	0.58	44.9	A
Via Mercado	I	55	38.0	28.4	66.4	0.52	28.2	C
Total	I		719.5	173.5	893.0	10.93	44.1	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	20.3	115.9	1.46	45.4	A
Jamacha Blvd.	I	55	38.0	39.8	77.8	0.52	24.1	D
SR 94	I	55	38.1	34.8	72.9	0.58	28.7	C
Cougar Canyon Rd.	I	55	78.0	20.2	98.2	1.19	43.7	A
Steele Canyon Rd.	I	55	81.2	50.5	131.7	1.24	33.9	C
Proctor Valley Rd.	I	55	142.2	18.8	161.0	2.17	48.6	A
Total	I		473.1	184.4	657.5	7.17	39.2	B

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	339.9	13.1	353.0	5.19	53.0	A
Steele Canyon Rd.	I	55	142.2	28.5	170.7	2.17	45.8	A
Cougar Canyon Rd.	I	55	81.2	12.5	93.7	1.24	47.7	A
Jamacha Rd.	I	55	78.0	48.4	126.4	1.19	33.9	C
Jamacha Blvd.	I	55	38.1	5.6	43.7	0.58	47.9	A
Via Mercado	I	55	38.0	48.4	86.4	0.52	21.7	D
Total	I		717.4	156.5	873.9	10.90	44.9	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	24.7	120.3	1.46	43.7	A
Jamacha Blvd.	I	55	38.0	37.7	75.7	0.52	24.8	D
SR 94	I	55	38.1	12.2	50.3	0.58	41.7	B
Cougar Canyon Rd.	I	55	78.0	17.8	95.8	1.19	44.8	A
Steele Canyon Rd.	I	55	81.2	34.0	115.2	1.24	38.8	B
Proctor Valley Rd.	I	55	143.7	15.9	159.6	2.19	49.5	A
Total	I		474.6	142.3	616.9	7.19	42.0	B

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	339.6	8.9	348.5	5.19	53.6	A
Steele Canyon Rd.	I	55	143.7	24.4	168.1	2.19	47.0	A
Cougar Canyon Rd.	I	55	81.2	13.9	95.1	1.24	47.0	A
Jamacha Rd.	I	55	78.0	44.3	122.3	1.19	35.1	B
Jamacha Blvd.	I	55	38.1	4.9	43.0	0.58	48.7	A
Via Mercado	I	55	38.0	28.3	66.3	0.52	28.3	C
Total	I		718.6	124.7	843.3	10.92	46.6	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	11.0	106.6	1.46	49.3	A
Jamacha Blvd.	I	55	38.0	20.2	58.2	0.52	32.2	C
SR 94	I	55	38.1	6.5	44.6	0.58	47.0	A
Cougar Canyon Rd.	I	55	78.0	17.9	95.9	1.19	44.7	A
Steele Canyon Rd.	I	55	81.2	30.4	111.6	1.24	40.0	B
Proctor Valley Rd.	I	55	144.6	18.0	162.6	2.21	48.9	A
Total	I		475.5	104.0	579.5	7.20	44.8	A

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	340.0	21.9	361.9	5.19	51.7	A
Steele Canyon Rd.	I	55	144.6	54.2	198.8	2.21	40.0	B
Cougar Canyon Rd.	I	55	81.2	22.7	103.9	1.24	43.0	A
Jamacha Rd.	I	55	78.0	41.7	119.7	1.19	35.8	B
Jamacha Blvd.	I	55	38.1	10.0	48.1	0.58	43.6	A
Via Mercado	I	55	38.0	24.2	62.2	0.52	30.1	C
Total	I		719.9	174.7	894.6	10.94	44.0	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	4.8	100.4	1.46	52.4	A
Jamacha Blvd.	I	55	38.0	21.1	59.1	0.52	31.7	C
SR 94	I	55	38.1	0.7	38.8	0.58	54.0	A
Cougar Canyon Rd.	I	55	78.0	5.3	83.3	1.19	51.5	A
Steele Canyon Rd.	I	55	81.2	10.4	91.6	1.24	48.8	A
Indian Springs Dr.	I	55	122.6	9.1	131.7	1.87	51.2	A
Proctor Valley Rd.	I	55	29.0	12.7	41.7	0.33	28.7	C
Melody Rd.	I	55	56.6	3.7	60.3	0.87	51.7	A
Reservation Rd.	I	55	28.5	9.0	37.5	0.33	31.4	C
Total	I		567.6	76.8	644.4	8.39	46.9	A

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	5.4	267.2	4.00	53.9	A
Peacefull Valley Ran	I	55	28.5	4.1	32.6	0.33	36.1	B
Jefferson Rd.	I	55	56.6	14.3	70.9	0.87	43.9	A
Lyons Valley Rd.	I	55	29.0	31.1	60.1	0.33	19.9	E
Steele Canyon Rd.	I	55	122.6	19.0	141.6	1.87	47.6	A
Cougar Canyon Rd.	I	55	81.2	26.6	107.8	1.24	41.4	B
Jamacha Rd.	I	55	78.0	30.8	108.8	1.19	39.4	B
Jamacha Blvd.	I	55	38.1	10.3	48.4	0.58	43.3	A
Via Mercado	I	55	38.0	28.4	66.4	0.52	28.2	C
Total	I		733.8	170.0	903.8	10.93	43.5	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	20.3	115.9	1.46	45.4	A
Jamacha Blvd.	I	55	38.0	37.2	75.2	0.52	24.9	D
SR 94	I	55	38.1	2.0	40.1	0.58	52.3	A
Cougar Canyon Rd.	I	55	78.0	20.2	98.2	1.19	43.7	A
Steele Canyon Rd.	I	55	81.2	17.7	98.9	1.24	45.2	A
Indian Springs Dr.	I	55	120.4	14.2	134.6	1.84	49.2	A
Proctor Valley Rd.	I	55	29.0	18.8	47.8	0.33	25.1	D
Melody Rd.	I	55	56.7	8.1	64.8	0.87	48.1	A
Reservation Rd.	I	55	28.5	22.6	51.1	0.33	23.0	D
Total	I		565.5	161.1	726.6	8.36	41.4	B

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	6.6	268.4	4.00	53.6	A
Peacefull Valley Ran	I	55	28.5	3.9	32.4	0.33	36.3	B
Jefferson Rd.	I	55	56.7	13.1	69.8	0.87	44.7	A
Lyons Valley Rd.	I	55	29.0	33.7	62.7	0.33	19.1	E
Steele Canyon Rd.	I	55	120.4	27.8	148.2	1.84	44.7	A
Cougar Canyon Rd.	I	55	81.2	12.5	93.7	1.24	47.7	A
Jamacha Rd.	I	55	78.0	48.4	126.4	1.19	33.9	C
Jamacha Blvd.	I	55	38.1	6.6	44.7	0.58	46.9	A
Via Mercado	I	55	38.0	48.4	86.4	0.52	21.7	D
Total	I		731.7	201.0	932.7	10.90	42.1	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	24.7	120.3	1.46	43.7	A
Jamacha Blvd.	I	55	38.0	34.9	72.9	0.52	25.7	D
SR 94	I	55	38.1	1.0	39.1	0.58	53.6	A
Cougar Canyon Rd.	I	55	78.0	17.8	95.8	1.19	44.8	A
Steele Canyon Rd.	I	55	81.2	17.2	98.4	1.24	45.4	A
Indian Springs Dr.	I	55	121.9	12.0	133.9	1.86	50.0	A
Proctor Valley Rd.	I	55	29.0	15.9	44.9	0.33	26.7	D
Melody Rd.	I	55	56.4	6.6	63.0	0.86	49.2	A
Reservation Rd.	I	55	28.5	17.2	45.7	0.33	25.8	D
Total	I		566.7	147.3	714.0	8.38	42.2	A

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	5.9	267.7	4.00	53.8	A
Peacefull Valley Ran	I	55	28.5	3.7	32.2	0.33	36.6	B
Jefferson Rd.	I	55	56.4	8.9	65.3	0.86	47.5	A
Lyons Valley Rd.	I	55	29.0	27.4	56.4	0.33	21.2	D
Steele Canyon Rd.	I	55	121.9	27.2	149.1	1.86	44.9	A
Cougar Canyon Rd.	I	55	81.2	13.9	95.1	1.24	47.0	A
Jamacha Rd.	I	55	78.0	44.3	122.3	1.19	35.1	B
Jamacha Blvd.	I	55	38.1	5.8	43.9	0.58	47.7	A
Via Mercado	I	55	38.0	28.3	66.3	0.52	28.3	C
Total	I		732.9	165.4	898.3	10.92	43.7	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	11.0	106.6	1.46	49.3	A
Jamacha Blvd.	I	55	38.0	22.3	60.3	0.52	31.1	C
SR 94	I	55	38.1	0.8	38.9	0.58	53.9	A
Cougar Canyon Rd.	I	55	78.0	17.9	95.9	1.19	44.7	A
Steele Canyon Rd.	I	55	81.2	18.3	99.5	1.24	44.9	A
Indian Springs Dr.	I	55	122.8	8.1	130.9	1.88	51.6	A
Proctor Valley Rd.	I	55	29.0	18.0	47.0	0.33	25.5	D
Melody Rd.	I	55	56.8	4.8	61.6	0.87	50.7	A
Reservation Rd.	I	55	28.5	17.2	45.7	0.33	25.8	D
Total	I		568.0	118.4	686.4	8.40	44.1	A

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	7.5	269.3	4.00	53.5	A
Peacefull Valley Ran	I	55	28.5	5.3	33.8	0.33	34.8	B
Jefferson Rd.	I	55	56.8	21.9	78.7	0.87	39.7	B
Lyons Valley Rd.	I	55	29.0	24.0	53.0	0.33	22.6	D
Steele Canyon Rd.	I	55	122.8	25.5	148.3	1.88	45.5	A
Cougar Canyon Rd.	I	55	81.2	22.7	103.9	1.24	43.0	A
Jamacha Rd.	I	55	78.0	41.7	119.7	1.19	35.8	B
Jamacha Blvd.	I	55	38.1	11.3	49.4	0.58	42.4	A
Via Mercado	I	55	38.0	24.2	62.2	0.52	30.1	C
Total	I		734.2	184.1	918.3	10.94	42.9	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	4.9	100.5	1.46	52.3	A
Jamacha Blvd.	I	55	38.0	22.5	60.5	0.52	31.0	C
SR 94	I	55	38.1	5.9	44.0	0.58	47.6	A
Cougar Canyon Rd.	I	55	78.0	6.2	84.2	1.19	50.9	A
Steele Canyon Rd.	I	55	81.2	11.5	92.7	1.24	48.2	A
Proctor Valley Rd.	I	55	143.5	30.6	174.1	2.19	45.3	A
Total	I		474.4	81.6	556.0	7.19	46.5	A

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	340.1	67.0	407.1	5.20	45.9	A
Steele Canyon Rd.	I	55	143.5	56.7	200.2	2.19	39.4	B
Cougar Canyon Rd.	I	55	81.2	45.9	127.1	1.24	35.1	B
Jamacha Rd.	I	55	78.0	44.4	122.4	1.19	35.0	B
Jamacha Blvd.	I	55	38.1	9.4	47.5	0.58	44.1	A
Via Mercado	I	55	38.0	44.3	82.3	0.52	22.8	D
Total	I		718.9	267.7	986.6	10.92	39.9	B

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	20.2	115.8	1.46	45.4	A
Jamacha Blvd.	I	55	38.0	72.3	110.3	0.52	17.0	E
SR 94	I	55	38.1	55.6	93.7	0.58	22.4	D
Cougar Canyon Rd.	I	55	78.0	25.9	103.9	1.19	41.3	B
Steele Canyon Rd.	I	55	81.2	75.8	157.0	1.24	28.5	C
Proctor Valley Rd.	I	55	146.4	45.9	192.3	2.24	41.9	B
Total	I		477.3	295.7	773.0	7.23	33.7	C

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	340.1	23.5	363.6	5.20	51.4	A
Steele Canyon Rd.	I	55	146.4	35.4	181.8	2.24	44.3	A
Cougar Canyon Rd.	I	55	81.2	14.1	95.3	1.24	46.9	A
Jamacha Rd.	I	55	78.0	93.7	171.7	1.19	25.0	D
Jamacha Blvd.	I	55	38.1	6.6	44.7	0.58	46.9	A
Via Mercado	I	55	38.0	68.6	106.6	0.52	17.6	E
Total	I		721.8	241.9	963.7	10.97	41.0	B

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	79.0	174.6	1.46	30.1	C
Jamacha Blvd.	I	55	38.0	71.3	109.3	0.52	17.1	E
SR 94	I	55	38.1	114.8	152.9	0.58	13.7	F
Cougar Canyon Rd.	I	55	78.0	65.7	143.7	1.19	29.8	C
Steele Canyon Rd.	I	55	81.2	153.3	234.5	1.24	19.1	E
Proctor Valley Rd.	I	55	144.8	54.2	199.0	2.21	40.0	B
Total	I		475.7	538.3	1014.0	7.21	25.6	D

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	339.3	60.3	399.6	5.18	46.7	A
Steele Canyon Rd.	I	55	144.8	50.8	195.6	2.21	40.7	B
Cougar Canyon Rd.	I	55	81.2	16.7	97.9	1.24	45.6	A
Jamacha Rd.	I	55	78.0	61.0	139.0	1.19	30.8	C
Jamacha Blvd.	I	55	38.1	6.2	44.3	0.58	47.3	A
Via Mercado	I	55	38.0	97.1	135.1	0.52	13.9	F
Total	I		719.4	292.1	1011.5	10.93	38.9	B

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	11.2	106.8	1.46	49.2	A
Jamacha Blvd.	I	55	38.0	23.0	61.0	0.52	30.7	C
SR 94	I	55	38.1	8.4	46.5	0.58	45.1	A
Cougar Canyon Rd.	I	55	78.0	8.6	86.6	1.19	49.5	A
Steele Canyon Rd.	I	55	81.2	21.6	102.8	1.24	43.5	A
Proctor Valley Rd.	I	55	147.3	19.3	166.6	2.25	48.6	A
Total	I		478.2	92.1	570.3	7.25	45.7	A

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Jefferson Rd.	I	55	339.9	23.6	363.5	5.19	51.4	A
Steele Canyon Rd.	I	55	147.3	35.5	182.8	2.25	44.3	A
Cougar Canyon Rd.	I	55	81.2	11.8	93.0	1.24	48.0	A
Jamacha Rd.	I	55	78.0	56.2	134.2	1.19	32.0	C
Jamacha Blvd.	I	55	38.1	11.5	49.6	0.58	42.2	A
Via Mercado	I	55	38.0	36.3	74.3	0.52	25.2	D
Total	I		722.5	174.9	897.4	10.98	44.0	A

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	4.9	100.5	1.46	52.3	A
Jamacha Blvd.	I	55	38.0	24.9	62.9	0.52	29.8	C
SR 94	I	55	38.1	0.8	38.9	0.58	53.9	A
Cougar Canyon Rd.	I	55	78.0	6.2	84.2	1.19	50.9	A
Steele Canyon Rd.	I	55	81.2	9.0	90.2	1.24	49.5	A
Indian Springs Dr.	I	55	121.7	9.8	131.5	1.86	50.9	A
Proctor Valley Rd.	I	55	29.0	30.6	59.6	0.33	20.1	E
Melody Rd.	I	55	56.9	6.5	63.4	0.87	49.4	A
Reservation Rd.	I	55	28.5	9.0	37.5	0.33	31.4	C
Total	I		567.0	101.7	668.7	8.39	45.1	A

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	5.4	267.2	4.00	53.9	A
Peacefull Valley Ran	I	55	28.5	9.5	38.0	0.33	31.0	C
Jefferson Rd.	I	55	56.9	67.0	123.9	0.87	25.3	D
Lyons Valley Rd.	I	55	29.0	46.5	75.5	0.33	15.9	F
Steele Canyon Rd.	I	55	121.7	25.3	147.0	1.86	45.5	A
Cougar Canyon Rd.	I	55	81.2	45.9	127.1	1.24	35.1	B
Jamacha Rd.	I	55	78.0	44.4	122.4	1.19	35.0	B
Jamacha Blvd.	I	55	38.1	10.9	49.0	0.58	42.8	A
Via Mercado	I	55	38.0	44.3	82.3	0.52	22.8	D
Total	I		733.2	299.2	1032.4	10.92	38.1	B

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	20.2	115.8	1.46	45.4	A
Jamacha Blvd.	I	55	38.0	61.6	99.6	0.52	18.8	E
SR 94	I	55	38.1	3.1	41.2	0.58	50.9	A
Cougar Canyon Rd.	I	55	78.0	25.9	103.9	1.19	41.3	B
Steele Canyon Rd.	I	55	81.2	19.4	100.6	1.24	44.4	A
Indian Springs Dr.	I	55	124.6	16.7	141.3	1.90	48.5	A
Proctor Valley Rd.	I	55	29.0	45.9	74.9	0.33	16.0	F
Melody Rd.	I	55	56.9	11.9	68.8	0.87	45.5	A
Reservation Rd.	I	55	28.5	37.9	66.4	0.33	17.7	E
Total	I		569.9	242.6	812.5	8.43	37.4	B

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	7.1	268.9	4.00	53.5	A
Peacefull Valley Ran	I	55	28.5	9.4	37.9	0.33	31.1	C
Jefferson Rd.	I	55	56.9	23.5	80.4	0.87	38.9	B
Lyons Valley Rd.	I	55	29.0	33.8	62.8	0.33	19.1	E
Steele Canyon Rd.	I	55	124.6	30.4	155.0	1.90	44.2	A
Cougar Canyon Rd.	I	55	81.2	14.1	95.3	1.24	46.9	A
Jamacha Rd.	I	55	78.0	93.7	171.7	1.19	25.0	D
Jamacha Blvd.	I	55	38.1	7.6	45.7	0.58	45.8	A
Via Mercado	I	55	38.0	68.6	106.6	0.52	17.6	E
Total	I		736.1	288.2	1024.3	10.97	38.5	B

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	79.0	174.6	1.46	30.1	C
Jamacha Blvd.	I	55	38.0	78.0	116.0	0.52	16.2	E
SR 94	I	55	38.1	3.1	41.2	0.58	50.9	A
Cougar Canyon Rd.	I	55	78.0	65.7	143.7	1.19	29.8	C
Steele Canyon Rd.	I	55	81.2	18.9	100.1	1.24	44.6	A
Indian Springs Dr.	I	55	123.0	22.5	145.5	1.88	46.5	A
Proctor Valley Rd.	I	55	29.0	54.2	83.2	0.33	14.4	F
Melody Rd.	I	55	56.1	13.9	70.0	0.86	44.1	A
Reservation Rd.	I	55	28.5	19.2	47.7	0.33	24.7	D
Total	I		567.5	354.5	922.0	8.39	32.8	C

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	6.1	267.9	4.00	53.7	A
Peacefull Valley Ran	I	55	28.5	10.8	39.3	0.33	30.0	C
Jefferson Rd.	I	55	56.1	60.3	116.4	0.86	26.5	D
Lyons Valley Rd.	I	55	29.0	41.0	70.0	0.33	17.1	E
Steele Canyon Rd.	I	55	123.0	27.7	150.7	1.88	44.9	A
Cougar Canyon Rd.	I	55	81.2	16.7	97.9	1.24	45.6	A
Jamacha Rd.	I	55	78.0	61.0	139.0	1.19	30.8	C
Jamacha Blvd.	I	55	38.1	7.1	45.2	0.58	46.4	A
Via Mercado	I	55	38.0	97.1	135.1	0.52	13.9	F
Total	I		733.7	327.8	1061.5	10.93	37.1	B

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	11.2	106.8	1.46	49.2	A
Jamacha Blvd.	I	55	38.0	27.8	65.8	0.52	28.5	C
SR 94	I	55	38.1	1.1	39.2	0.58	53.4	A
Cougar Canyon Rd.	I	55	78.0	8.6	86.6	1.19	49.5	A
Steele Canyon Rd.	I	55	81.2	12.5	93.7	1.24	47.7	A
Indian Springs Dr.	I	55	125.5	9.2	134.7	1.92	51.3	A
Proctor Valley Rd.	I	55	29.0	19.3	48.3	0.33	24.8	D
Melody Rd.	I	55	56.7	9.4	66.1	0.87	47.2	A
Reservation Rd.	I	55	28.5	18.3	46.8	0.33	25.2	D
Total	I		570.6	117.4	688.0	8.44	44.2	A

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservation Rd.	I	55	261.8	7.5	269.3	4.00	53.5	A
Peacefull Valley Ran	I	55	28.5	9.7	38.2	0.33	30.8	C
Jefferson Rd.	I	55	56.7	23.6	80.3	0.87	38.8	B
Lyons Valley Rd.	I	55	29.0	25.2	54.2	0.33	22.1	D
Steele Canyon Rd.	I	55	125.5	20.3	145.8	1.92	47.4	A
Cougar Canyon Rd.	I	55	81.2	11.8	93.0	1.24	48.0	A
Jamacha Rd.	I	55	78.0	56.2	134.2	1.19	32.0	C
Jamacha Blvd.	I	55	38.1	13.7	51.8	0.58	40.4	B
Via Mercado	I	55	38.0	36.3	74.3	0.52	25.2	D
Total	I		736.8	204.3	941.1	10.98	42.0	B

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	12.7	108.3	1.46	48.6	A
Jamacha Blvd.	I	55	38.0	31.2	69.2	0.52	27.1	C
SR 94	I	55	38.1	10.3	48.4	0.58	43.3	A
Cougar Canyon Rd.	I	55	78.0	5.2	83.2	1.19	51.5	A
Steele Canyon Rd.	I	55	81.2	11.0	92.2	1.24	48.5	A
Proctor Valley Rd.	I	55	142.6	172.6	315.2	2.18	24.9	D
Otay Lakes Rd.	I	55	314.2	23.9	338.1	4.80	51.1	A
Total	I		787.7	266.9	1054.6	11.97	40.9	B

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	17.3	49.7	0.39	28.6	C
Jefferson Rd.	I	55	314.2	323.0	637.2	4.80	27.1	C
Steele Canyon Rd.	I	55	142.6	61.5	204.1	2.18	38.4	B
Cougar Canyon Rd.	I	55	81.2	47.2	128.4	1.24	34.8	B
Jamacha Rd.	I	55	78.0	90.9	168.9	1.19	25.4	D
Jamacha Blvd.	I	55	38.1	17.0	55.1	0.58	38.0	B
Via Mercado	I	55	38.0	235.9	273.9	0.52	6.8	F
Total	I		724.5	792.8	1517.3	10.91	25.9	D

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	102.5	198.1	1.46	26.5	D
Jamacha Blvd.	I	55	38.0	129.5	167.5	0.52	11.2	F
SR 94	I	55	38.1	106.0	144.1	0.58	14.5	F
Cougar Canyon Rd.	I	55	78.0	29.0	107.0	1.19	40.1	B
Steele Canyon Rd.	I	55	81.2	108.8	190.0	1.24	23.5	D
Proctor Valley Rd.	I	55	142.7	313.4	456.1	2.18	17.2	E
Otay Lakes Rd.	I	55	314.4	36.3	350.7	4.80	49.3	A
Total	I		788.0	825.5	1613.5	11.98	26.7	D

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	9.2	41.6	0.39	34.2	B
Jefferson Rd.	I	55	314.4	112.2	426.6	4.80	40.5	B
Steele Canyon Rd.	I	55	142.7	38.0	180.7	2.18	43.4	A
Cougar Canyon Rd.	I	55	81.2	13.3	94.5	1.24	47.3	A
Jamacha Rd.	I	55	78.0	430.8	508.8	1.19	8.4	F
Jamacha Blvd.	I	55	38.1	9.1	47.2	0.58	44.4	A
Via Mercado	I	55	38.0	387.3	425.3	0.52	4.4	F
Total	I		724.8	999.9	1724.7	10.91	22.8	D

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	198.7	294.3	1.46	17.9	E
Jamacha Blvd.	I	55	38.0	120.2	158.2	0.52	11.8	F
SR 94	I	55	38.1	177.7	215.8	0.58	9.7	F
Cougar Canyon Rd.	I	55	78.0	59.5	137.5	1.19	31.2	C
Steele Canyon Rd.	I	55	81.2	162.0	243.2	1.24	18.4	E
Proctor Valley Rd.	I	55	142.9	344.4	487.3	2.18	16.1	E
Otay Lakes Rd.	I	55	314.6	37.2	351.8	4.81	49.2	A
Total	I		788.4	1099.7	1888.1	11.98	22.9	D

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	12.3	44.7	0.39	31.8	C
Jefferson Rd.	I	55	314.6	208.3	522.9	4.81	33.1	C
Steele Canyon Rd.	I	55	142.9	56.1	199.0	2.18	39.5	B
Cougar Canyon Rd.	I	55	81.2	16.2	97.4	1.24	45.9	A
Jamacha Rd.	I	55	78.0	314.2	392.2	1.19	10.9	F
Jamacha Blvd.	I	55	38.1	7.8	45.9	0.58	45.6	A
Via Mercado	I	55	38.0	383.6	421.6	0.52	4.4	F
Total	I		725.2	998.5	1723.7	10.92	22.8	D

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	34.0	129.6	1.46	40.6	B
Jamacha Blvd.	I	55	38.0	39.0	77.0	0.52	24.3	D
SR 94	I	55	38.1	16.6	54.7	0.58	38.3	B
Cougar Canyon Rd.	I	55	78.0	8.7	86.7	1.19	49.5	A
Steele Canyon Rd.	I	55	81.2	22.0	103.2	1.24	43.3	A
Proctor Valley Rd.	I	55	142.6	146.5	289.1	2.18	27.1	C
Otay Lakes Rd.	I	55	314.4	20.0	334.4	4.80	51.7	A
Total	I		787.9	286.8	1074.7	11.98	40.1	B

Arterial Level of Service: WB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	12.7	45.1	0.39	31.5	C
Jefferson Rd.	I	55	314.4	92.7	407.1	4.80	42.5	A
Steele Canyon Rd.	I	55	142.6	35.9	178.5	2.18	44.0	A
Cougar Canyon Rd.	I	55	81.2	11.7	92.9	1.24	48.1	A
Jamacha Rd.	I	55	78.0	333.6	411.6	1.19	10.4	F
Jamacha Blvd.	I	55	38.1	14.9	53.0	0.58	39.5	B
Via Mercado	I	55	38.0	192.9	230.9	0.52	8.1	F
Total	I		724.7	694.4	1419.1	10.91	27.7	C

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	12.7	108.3	1.46	48.6	A
Jamacha Blvd.	I	55	38.0	31.2	69.2	0.52	27.1	C
SR 94	I	55	38.1	1.8	39.9	0.58	52.5	A
Cougar Canyon Rd.	I	55	78.0	5.2	83.2	1.19	51.5	A
Steele Canyon Rd.	I	55	81.2	8.5	89.7	1.24	49.8	A
Indian Springs Dr.	I	55	120.8	8.0	128.8	1.85	51.6	A
Proctor Valley Rd.	I	55	29.0	172.6	201.6	0.33	5.9	F
Melody Rd.	I	55	56.8	9.2	66.0	0.87	47.3	A
Reservation Rd.	I	55	28.5	9.2	37.7	0.33	31.2	C
Otay Lakes Rd.	I	55	236.0	23.9	259.9	3.60	49.9	A
Total	I		802.0	282.3	1084.3	11.97	39.8	B

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	17.3	49.7	0.39	28.6	C
Reservation Rd.	I	55	236.0	5.3	241.3	3.60	53.8	A
Peacefull Valley Ran	I	55	28.5	12.7	41.2	0.33	28.6	C
Jefferson Rd.	I	55	56.8	323.0	379.8	0.87	8.2	F
Lyons Valley Rd.	I	55	29.0	27.9	56.9	0.33	21.1	D
Steele Canyon Rd.	I	55	120.8	23.5	144.3	1.85	46.0	A
Cougar Canyon Rd.	I	55	81.2	47.2	128.4	1.24	34.8	B
Jamacha Rd.	I	55	78.0	90.9	168.9	1.19	25.4	D
Jamacha Blvd.	I	55	38.1	17.0	55.1	0.58	38.0	B
Via Mercado	I	55	38.0	235.9	273.9	0.52	6.8	F
Total	I		738.8	800.7	1539.5	10.91	25.5	D

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	102.5	198.1	1.46	26.5	D
Jamacha Blvd.	I	55	38.0	111.0	149.0	0.52	12.6	F
SR 94	I	55	38.1	7.7	45.8	0.58	45.7	A
Cougar Canyon Rd.	I	55	78.0	29.0	107.0	1.19	40.1	B
Steele Canyon Rd.	I	55	81.2	21.5	102.7	1.24	43.5	A
Indian Springs Dr.	I	55	120.9	28.3	149.2	1.85	44.6	A
Proctor Valley Rd.	I	55	29.0	313.4	342.4	0.33	3.5	F
Melody Rd.	I	55	57.0	124.5	181.5	0.87	17.3	E
Reservation Rd.	I	55	28.5	96.7	125.2	0.33	9.4	F
Otay Lakes Rd.	I	55	236.0	36.3	272.3	3.60	47.7	A
Total	I		802.3	870.9	1673.2	11.98	25.8	D

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	9.2	41.6	0.39	34.2	B
Reservation Rd.	I	55	236.0	7.1	243.1	3.60	53.4	A
Peacefull Valley Ran	I	55	28.5	13.8	42.3	0.33	27.8	C
Jefferson Rd.	I	55	57.0	112.2	169.2	0.87	18.5	E
Lyons Valley Rd.	I	55	29.0	32.8	61.8	0.33	19.4	E
Steele Canyon Rd.	I	55	120.9	32.1	153.0	1.85	43.4	A
Cougar Canyon Rd.	I	55	81.2	13.3	94.5	1.24	47.3	A
Jamacha Rd.	I	55	78.0	356.1	434.1	1.19	9.9	F
Jamacha Blvd.	I	55	38.1	9.3	47.4	0.58	44.2	A
Via Mercado	I	55	38.0	387.3	425.3	0.52	4.4	F
Total	I		739.1	973.2	1712.3	10.91	22.9	D

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	198.7	294.3	1.46	17.9	E
Jamacha Blvd.	I	55	38.0	109.2	147.2	0.52	12.7	F
SR 94	I	55	38.1	7.2	45.3	0.58	46.3	A
Cougar Canyon Rd.	I	55	78.0	59.5	137.5	1.19	31.2	C
Steele Canyon Rd.	I	55	81.2	19.3	100.5	1.24	44.5	A
Indian Springs Dr.	I	55	121.1	21.2	142.3	1.85	46.8	A
Proctor Valley Rd.	I	55	29.0	344.4	373.4	0.33	3.2	F
Melody Rd.	I	55	57.2	31.7	88.9	0.87	35.4	B
Reservation Rd.	I	55	28.5	26.0	54.5	0.33	21.6	D
Otay Lakes Rd.	I	55	236.0	37.2	273.2	3.60	47.5	A
Total	I		802.7	854.4	1657.1	11.98	26.0	D

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	12.3	44.7	0.39	31.8	C
Reservation Rd.	I	55	236.0	5.9	241.9	3.60	53.6	A
Peacefull Valley Ran	I	55	28.5	12.4	40.9	0.33	28.8	C
Jefferson Rd.	I	55	57.2	208.3	265.5	0.87	11.9	F
Lyons Valley Rd.	I	55	29.0	22.2	51.2	0.33	23.4	D
Steele Canyon Rd.	I	55	121.1	28.1	149.2	1.85	44.6	A
Cougar Canyon Rd.	I	55	81.2	16.2	97.4	1.24	45.9	A
Jamacha Rd.	I	55	78.0	314.2	392.2	1.19	10.9	F
Jamacha Blvd.	I	55	38.1	7.9	46.0	0.58	45.5	A
Via Mercado	I	55	38.0	383.6	421.6	0.52	4.4	F
Total	I		739.5	1011.1	1750.6	10.92	22.5	D

Arterial Level of Service: EB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Via Mercado	I	55	95.6	34.0	129.6	1.46	40.6	B
Jamacha Blvd.	I	55	38.0	36.4	74.4	0.52	25.2	D
SR 94	I	55	38.1	3.7	41.8	0.58	50.1	A
Cougar Canyon Rd.	I	55	78.0	8.7	86.7	1.19	49.5	A
Steele Canyon Rd.	I	55	81.2	13.0	94.2	1.24	47.4	A
Indian Springs Dr.	I	55	120.8	11.6	132.4	1.85	50.2	A
Proctor Valley Rd.	I	55	29.0	146.5	175.5	0.33	6.8	F
Melody Rd.	I	55	57.0	21.7	78.7	0.87	39.9	B
Reservation Rd.	I	55	28.5	233.9	262.4	0.33	4.5	F
Otay Lakes Rd.	I	55	236.0	20.0	256.0	3.60	50.7	A
Total	I		802.2	529.5	1331.7	11.98	32.4	C

Arterial Level of Service: NB SR 94

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	32.4	12.7	45.1	0.39	31.5	C
Reservation Rd.	I	55	236.0	7.3	243.3	3.60	53.3	A
Peacefull Valley Ran	I	55	28.5	12.9	41.4	0.33	28.4	C
Jefferson Rd.	I	55	57.0	92.7	149.7	0.87	21.0	E
Lyons Valley Rd.	I	55	29.0	24.9	53.9	0.33	22.2	D
Steele Canyon Rd.	I	55	120.8	22.1	142.9	1.85	46.5	A
Cougar Canyon Rd.	I	55	81.2	11.7	92.9	1.24	48.1	A
Jamacha Rd.	I	55	78.0	296.1	374.1	1.19	11.5	F
Jamacha Blvd.	I	55	38.1	15.2	53.3	0.58	39.3	B
Via Mercado	I	55	38.0	192.9	230.9	0.52	8.1	F
Total	I		739.0	688.5	1427.5	10.91	27.5	C

APPENDIX H

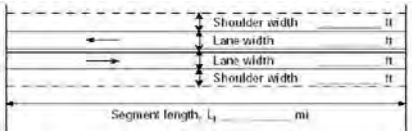
- Two-Way Two-Lane Highway Analysis Worksheets

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	722 veh/h
Directional split	66 / 34
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ mi	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.986
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	796
v_p * highest directional split proportion[2] (pc/h)	525

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	4.0 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.0
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	40.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	790
v_p * highest directional split proportion[2] (pc/h)	521
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	50.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	14.8
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	64.9

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.25
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	177
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	650
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.4

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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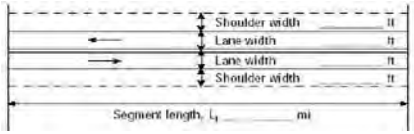
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	717 veh/h
Directional split	65 / 35
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ mi	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.986
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	790
v_p * highest directional split proportion[2] (pc/h)	514

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	4.0 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.0
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	40.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	785
v_p * highest directional split proportion[2] (pc/h)	510
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	49.8
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	15.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	64.8

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.25
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	175
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	645
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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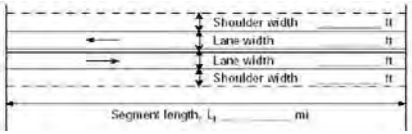
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	775 veh/h
Directional split	79 / 21
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses, P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ mi	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.986
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	854
v_p * highest directional split proportion[2] (pc/h)	675

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	4.0 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	2.9
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	40.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	848
v_p * highest directional split proportion[2] (pc/h)	670
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	52.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	16.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	68.7

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.27
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	190
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	697
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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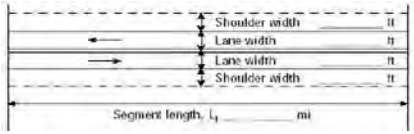
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	595 veh/h
Directional split	53 / 47
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses, P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ mi	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.986
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	656
v_p * highest directional split proportion[2] (pc/h)	348

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	4.0 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.6
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	41.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	651
v_p * highest directional split proportion[2] (pc/h)	345
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	43.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	19.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	62.7

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.20
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	146
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	535
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	3.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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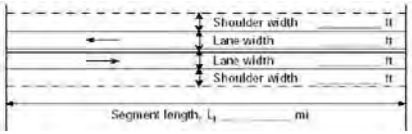
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	609 veh/h
Directional split	67 / 33
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	1

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	764
v_p * highest directional split proportion[2] (pc/h)	512

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.3 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.2
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	44.4

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	732
v_p * highest directional split proportion[2] (pc/h)	490
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	47.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	16.7
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	64.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.24
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	50
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	183
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	1.1

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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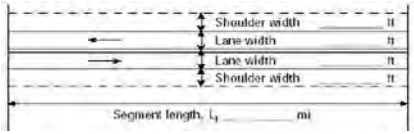
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	644 veh/h
Directional split	69 / 31
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	1

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	808
v_p * highest directional split proportion[2] (pc/h)	558

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.3 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.0
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	44.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	774
v_p * highest directional split proportion[2] (pc/h)	534
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	49.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	15.4
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	64.8

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.25
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	53
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	193
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	1.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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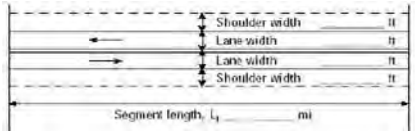
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	733 veh/h
Directional split	71 / 29
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	1

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	920
v_p * highest directional split proportion[2] (pc/h)	553

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.3 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	2.8
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	43.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	881
v_p * highest directional split proportion[2] (pc/h)	626
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	53.9
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	14.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	67.9

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.29
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	60
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	220
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	1.4

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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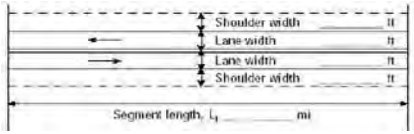
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	525 veh/h
Directional split	54 / 46
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	1

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	659
v_p * highest directional split proportion[2] (pc/h)	356

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.3 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.6
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	44.7

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	631
v_p * highest directional split proportion[2] (pc/h)	341
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	42.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	19.7
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	62.3

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.21
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	43
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	158
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	1.0

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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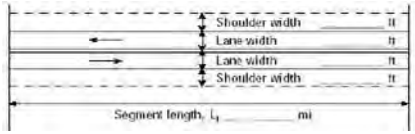
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	609 veh/h
Directional split	67 / 33
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	2

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	764
v_p * highest directional split proportion[2] (pc/h)	512

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.5 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	2.8
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	44.4

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	732
v_p * highest directional split proportion[2] (pc/h)	490
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	47.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	16.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	63.4

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.24
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	629
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	2314
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	14.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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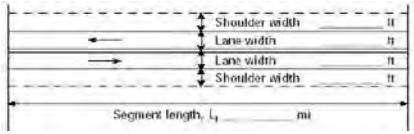
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	612 veh/h
Directional split	68 / 32
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	2

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	768
v_p * highest directional split proportion[2] (pc/h)	522

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.5 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	2.8
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	44.4

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	736
v_p * highest directional split proportion[2] (pc/h)	500
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	47.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	15.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	63.5

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.24
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	632
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	2326
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	14.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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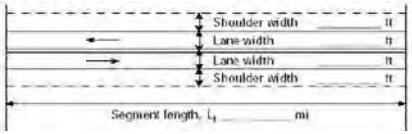
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	685 veh/h
Directional split	73 / 27
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	2

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	860
v_p * highest directional split proportion[2] (pc/h)	628

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.5 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	2.5
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	44.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	824
v_p * highest directional split proportion[2] (pc/h)	602
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	51.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	14.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	66.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.27
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	707
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	2603
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	16.1

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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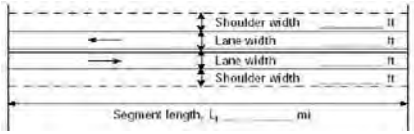
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Existing (2009) Baseline

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	512 veh/h
Directional split	57 / 43
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses, P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	2

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	643
v_p * highest directional split proportion[2] (pc/h)	367

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.5 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.2
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	45.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	616
v_p * highest directional split proportion[2] (pc/h)	351
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	41.8
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	19.3
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	61.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.20
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	529
Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	1946
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	11.8

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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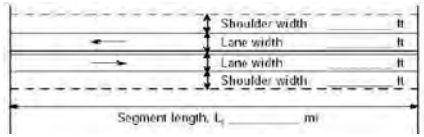
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1272 veh/h
Directional split	51 / 49
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1392
v_p * highest directional split proportion[2] (pc/h)	710

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.7
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	37.2

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1383
v_p * highest directional split proportion[2] (pc/h)	705
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	70.3
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	8.1
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	78.5

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.44
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	311

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1145
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	8.4

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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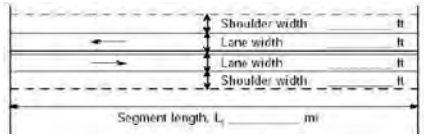
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1640 veh/h
Directional split	58 / 42
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1795
v_p * highest directional split proportion[2] (pc/h)	1041

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.3
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	34.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1783
v_p * highest directional split proportion[2] (pc/h)	1034
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	79.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	5.7
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	84.8

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.56
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	401

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1476
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	11.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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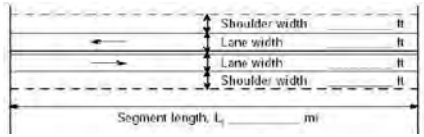
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	2061 veh/h
Directional split	55 / 45
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2256
v_p * highest directional split proportion[2] (pc/h)	1241

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	31.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2240
v_p * highest directional split proportion[2] (pc/h)	1232
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	86.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	89.6

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.70
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	504

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1855
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	16.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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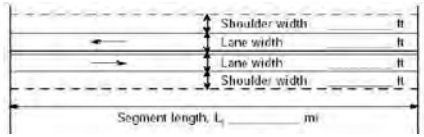
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1881 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2059
v_p * highest directional split proportion[2] (pc/h)	1071

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	32.6

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2045
v_p * highest directional split proportion[2] (pc/h)	1063
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	83.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	87.7

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.64
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	460

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1693
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	14.1

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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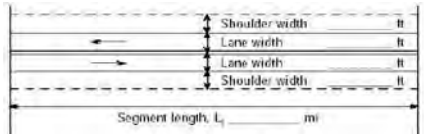
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1172 veh/h
Directional split	51 / 49
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1341
v_p * highest directional split proportion[2] (pc/h)	684

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.3 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	41.2

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1274
v_p * highest directional split proportion[2] (pc/h)	650
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	67.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	9.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	76.8

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.42
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	96

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	352
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	2.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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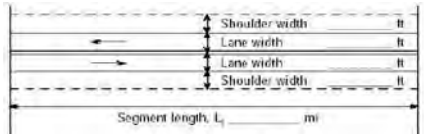
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1590 veh/h
Directional split	60 / 40
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1819
v_p * highest directional split proportion[2] (pc/h)	1091

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.3 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.3
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	38.1

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1728
v_p * highest directional split proportion[2] (pc/h)	1037
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	78.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	84.1

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.57
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	130

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	477
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	3.4

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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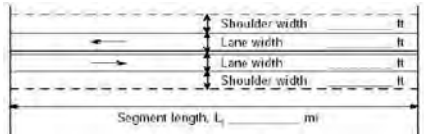
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	2051 veh/h
Directional split	55 / 45
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	1

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2346
v_p * highest directional split proportion[2] (pc/h)	1290

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.3 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	34.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2229
v_p * highest directional split proportion[2] (pc/h)	1226
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	85.9
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.6
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	89.5

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.73
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	167

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	615
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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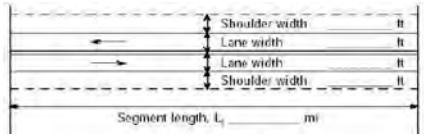
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1843 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2108
v_p * highest directional split proportion[2] (pc/h)	1096

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.3 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	36.0

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2003
v_p * highest directional split proportion[2] (pc/h)	1042
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	82.8
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.4
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	87.2

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.66
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	150

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	553
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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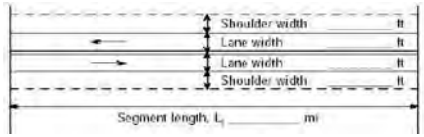
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	733 veh/h
Directional split	68 / 32
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	920
v_p * highest directional split proportion[2] (pc/h)	626

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.4
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	43.7

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	881
v_p * highest directional split proportion[2] (pc/h)	599
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	53.9
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	13.1
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	67.0

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.29
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	757

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	2785
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	17.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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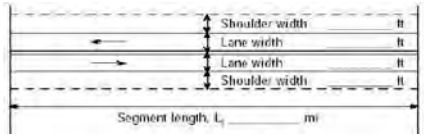
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	819 veh/h
Directional split	62 / 38
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1028
v_p * highest directional split proportion[2] (pc/h)	637

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	43.1

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	985
v_p * highest directional split proportion[2] (pc/h)	611
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	57.9
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	69.8

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.32
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	846

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3112
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	19.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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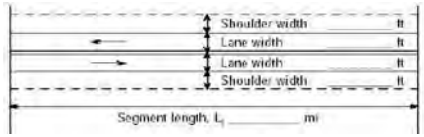
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	974 veh/h
Directional split	67 / 33
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1114
v_p * highest directional split proportion[2] (pc/h)	746

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.0
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	42.5

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1171
v_p * highest directional split proportion[2] (pc/h)	785
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	64.3
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	10.1
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	74.4

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.35
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1006

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3701
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	23.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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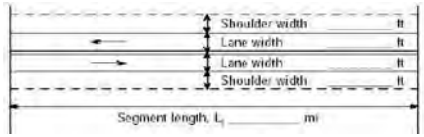
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Existing (2009) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	801 veh/h
Directional split	56 / 44
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1005
v_p * highest directional split proportion[2] (pc/h)	563

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	43.2

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	963
v_p * highest directional split proportion[2] (pc/h)	539
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	57.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	12.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	69.4

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.31
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	827

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3044
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	19.1

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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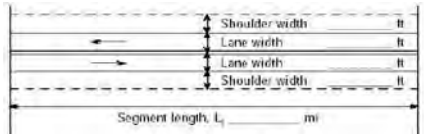
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1449 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1586
v_p * highest directional split proportion[2] (pc/h)	825

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.5
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	35.9

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1575
v_p * highest directional split proportion[2] (pc/h)	819
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	75.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	81.9

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.50
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	354

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1304
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	9.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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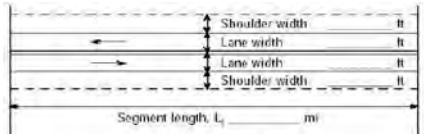
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1864 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ mi	16

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2040
v_p * highest directional split proportion[2] (pc/h)	1204

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	4.0 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.1
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	32.8

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2026
v_p * highest directional split proportion[2] (pc/h)	1195
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	83.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	87.4

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.64
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	456

Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	1678
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	13.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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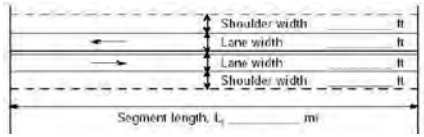
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	2034 veh/h
Directional split	57 / 43
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2226
v_p * highest directional split proportion[2] (pc/h)	1269

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	31.3

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2211
v_p * highest directional split proportion[2] (pc/h)	1260
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	85.7
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.6
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	89.3

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.70
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	497

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1831
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	15.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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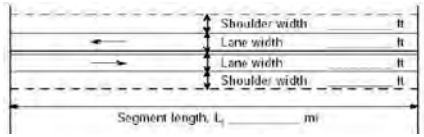
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1811 veh/h
Directional split	51 / 49
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1982
v_p * highest directional split proportion[2] (pc/h)	1011

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	33.2

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1968
v_p * highest directional split proportion[2] (pc/h)	1004
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	82.3
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.6
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	86.8

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.62
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	443

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1630
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	13.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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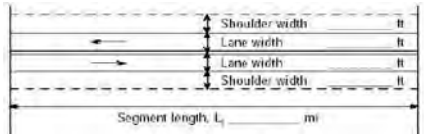
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1159 veh/h
Directional split	50 / 50
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1326
v_p * highest directional split proportion[2] (pc/h)	663

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.3 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	41.3

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1260
v_p * highest directional split proportion[2] (pc/h)	630
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	67.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	9.6
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	76.6

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.41
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	94

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	348
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	2.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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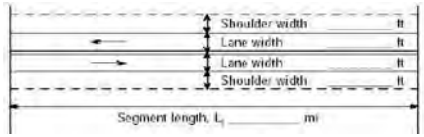
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1516 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1734
v_p * highest directional split proportion[2] (pc/h)	1023

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.3 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.4
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	38.6

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1648
v_p * highest directional split proportion[2] (pc/h)	972
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	76.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	83.0

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.54
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	124

Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	455
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	3.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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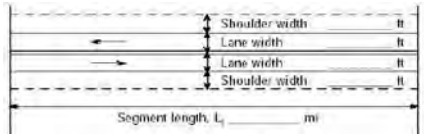
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1903 veh/h
Directional split	56 / 44
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2177
v_p * highest directional split proportion[2] (pc/h)	1219

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.3 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.1
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	35.5

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2068
v_p * highest directional split proportion[2] (pc/h)	1158
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	83.8
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.1
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	87.9

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.68
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	155

Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	571
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.4

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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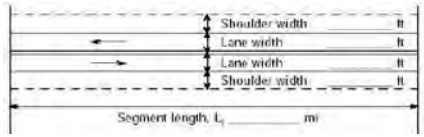
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1696 veh/h
Directional split	50 / 50
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1940
v_p * highest directional split proportion[2] (pc/h)	970

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.3 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	37.2

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1843
v_p * highest directional split proportion[2] (pc/h)	922
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	80.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	5.3
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	85.5

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.61
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	138

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	509
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	3.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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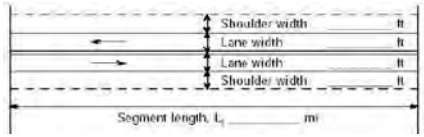
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	816 veh/h
Directional split	61 / 39
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1024
v_p * highest directional split proportion[2] (pc/h)	625

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	43.1

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	981
v_p * highest directional split proportion[2] (pc/h)	598
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	57.8
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	69.7

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.32
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	843

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3101
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	19.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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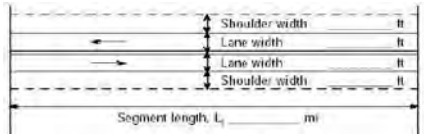
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	884 veh/h
Directional split	66 / 34
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1110
v_p * highest directional split proportion[2] (pc/h)	733

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.0
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	42.6

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1063
v_p * highest directional split proportion[2] (pc/h)	702
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	60.7
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	71.9

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.35
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	913

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3359
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	21.5

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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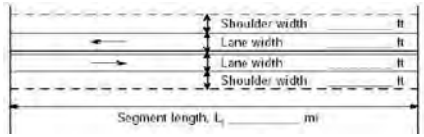
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1032 veh/h
Directional split	63 / 37
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1181
v_p * highest directional split proportion[2] (pc/h)	744

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.9
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	42.1

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1122
v_p * highest directional split proportion[2] (pc/h)	707
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	62.7
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	10.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	73.2

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.37
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1066

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3922
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	25.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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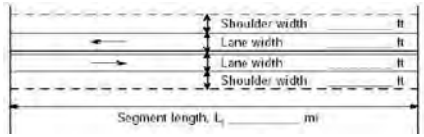
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Near Term (2015) With Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	803 veh/h
Directional split	58 / 42
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.931
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1008
v_p * highest directional split proportion[2] (pc/h)	585

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	43.2

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.962
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	966
v_p * highest directional split proportion[2] (pc/h)	560
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	57.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	12.1
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	69.3

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.31
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	829

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3051
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	19.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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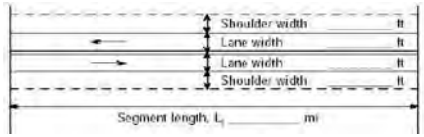
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1519 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1663
v_p * highest directional split proportion[2] (pc/h)	865

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.4
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	35.4

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1651
v_p * highest directional split proportion[2] (pc/h)	859
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	76.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	83.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.52
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	371

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1367
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	10.5

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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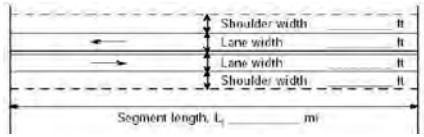
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	2107 veh/h
Directional split	62 / 38
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2306
v_p * highest directional split proportion[2] (pc/h)	1430

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	30.7

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2290
v_p * highest directional split proportion[2] (pc/h)	1420
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	86.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	90.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.72
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	515

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1896
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	16.8

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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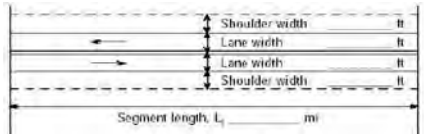
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	2245 veh/h
Directional split	62 / 38
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2457
v_p * highest directional split proportion[2] (pc/h)	1523

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	29.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2440
v_p * highest directional split proportion[2] (pc/h)	1513
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	88.3
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	91.3

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.77
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	549

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	2020
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	18.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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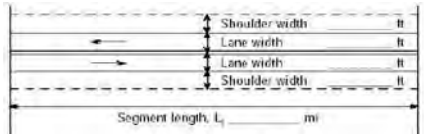
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1892 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2071
v_p * highest directional split proportion[2] (pc/h)	1077

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	32.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2057
v_p * highest directional split proportion[2] (pc/h)	1070
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	83.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	87.8

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.65
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	463

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1703
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	14.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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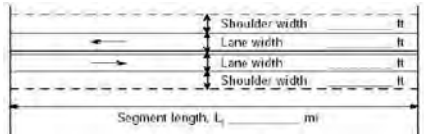
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1519 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1663
v_p * highest directional split proportion[2] (pc/h)	865

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.4
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	35.4

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1651
v_p * highest directional split proportion[2] (pc/h)	859
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	76.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	83.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.52
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	371

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1367
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	10.5

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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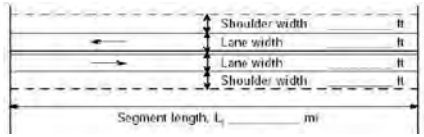
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Proctor Valley Rd / Melody Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	2107 veh/h
Directional split	62 / 38
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	7 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	16

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.993
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2306
v_p * highest directional split proportion[2] (pc/h)	1430

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	4.0 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	49.7 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	30.7

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2290
v_p * highest directional split proportion[2] (pc/h)	1420
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	86.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	90.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.72
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	515

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1896
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	16.8

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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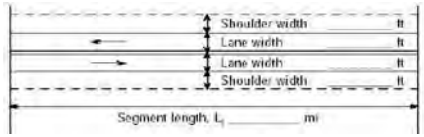
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1982 veh/h
Directional split	60 / 40
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2268
v_p * highest directional split proportion[2] (pc/h)	1361

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.3 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	34.8

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2154
v_p * highest directional split proportion[2] (pc/h)	1292
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	84.9
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.8
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	88.7

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.71
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	162

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	595
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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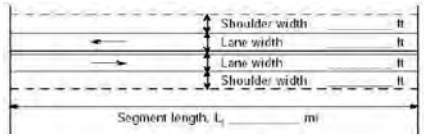
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Melody Rd / Project Dwy
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Horizon Year (2035) Project

Project Description: Jamul Indian Village

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1760 veh/h
Directional split	53 / 47
Peak-hour factor, PHF	0.92
No-passing zone	100
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ mi	1

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2014
v_p * highest directional split proportion[2] (pc/h)	1067

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	55.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.3 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.5 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.1
Average travel speed, ATS (mi/h) ATS=FFS-0.00776v_p-f_{np}	36.7

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1913
v_p * highest directional split proportion[2] (pc/h)	1014
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	81.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	86.3

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.63
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= 0.25L_t(V/PHF)	143

Peak-hour vehicle-miles of travel, VMT_{60}(veh- mi)=V*L_t	528
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	3.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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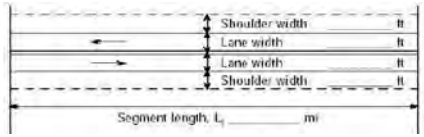
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday AM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1497 veh/h
Directional split	62 / 38
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1713
v_p * highest directional split proportion[2] (pc/h)	1062

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	38.7

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1627
v_p * highest directional split proportion[2] (pc/h)	1009
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	76.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.3
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	82.3

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.54
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1546

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	5689
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	39.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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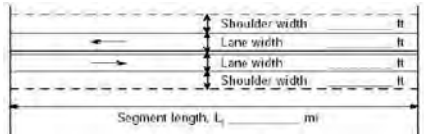
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Weekday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1555 veh/h
Directional split	65 / 35
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1779
v_p * highest directional split proportion[2] (pc/h)	1156

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	38.3

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1690
v_p * highest directional split proportion[2] (pc/h)	1099
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	77.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	5.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	83.3

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.56
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1606

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	5909
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	42.0

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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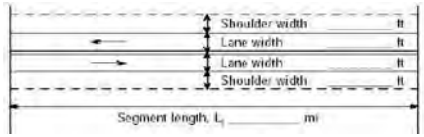
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Friday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1762 veh/h
Directional split	72 / 28
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2016
v_p * highest directional split proportion[2] (pc/h)	1452

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.0
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	36.6

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T-1)+P_R(E_R-1)$)	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1915
v_p * highest directional split proportion[2] (pc/h)	1379
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	81.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.6
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	86.1

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.63
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1819

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	6696
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	49.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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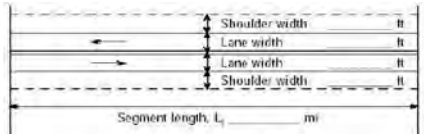
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	MDL	Highway	SR-94
Agency or Company	Kimley-Horn and Associates	From/To	Project Dwy / Otay Lakes Rd
Date Performed	11/8/2011	Jurisdiction	County of San Diego
Analysis Time Period	Saturday PM	Analysis Year	Horizon Year (2035) Project

Project Description: *Jamul Indian Village*

Input Data



☑ Class I highway ☐ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1320 veh/h
Directional split	58 / 42
Peak-hour factor, PHF	0.92
No-passing zone	80
% Trucks and Buses , P_T	8 %
% Recreational vehicles, P_R	2%
Access points/ *mi*	2

Average Travel Speed	
Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.960
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1510
v_p * highest directional split proportion[2] (pc/h)	876

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	55.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.5 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	53.2 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.3
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	40.1

Percent Time-Spent-Following	
Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1435
v_p * highest directional split proportion[2] (pc/h)	832
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	71.7
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	7.3
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	79.0

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.47
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1363

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	5016
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	34.0

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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APPENDIX I

- Cumulative Project Information

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engineers

TRAFFIC IMPACT ANALYSIS

PEACEFUL VALLEY RANCH (TM – 5341 RPL5)

Log No. 04-19-007, GPA 03-05, R03-15, MUP 04-048

JAMUL, CALIFORNIA

April 24, 2007

LLG Ref. 3-03-1266

Prepared by:
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2.0 Project Description

The Peaceful Valley Ranch project proposes the subdivision of 181.31-acres for an estate residential development, equestrian uses and amenities, and fire service facilities. The development plan includes a total of 57 lots consisting of:

a) 1 – estate residential lot of 4.0-acres for the existing Ranch House (Lot 5);
b) 46 new estate residential lots ranging in size from a minimum of 2-acres up to approximately 7.7 acres (Lots 1-4 and 6-47);
c) 1 - 6.7-acre equestrian facility lot (Lot 48);
d) 1 - 3.7-acre lot reserved for a new joint-use fire station and administrative offices of the RFPD and US Fish and Wildlife Service (Lot 49);
e) 1- 3.7-acre open space lot for the protection of biological resources (Lot 50);
f) 1 -28.9 acre private horse stable and training facilities / polo field lot (Lot 51); and,
g) 6 private roadway lots (Lots 52-57)

The proposed project requires the approval of a tentative map (TM 5341RPL[5]) by the County of San Diego.

The project also includes a General Plan Amendment (GPA) to amend the existing land use designation of the easterly 152.4-acres of the 181.31-acre property from (18) Multiple Rural Use (1 du/4,8,20 ac) with an A72 (8) General Agriculture zone, to the (17) Estate Residential (1 du/2, 4ac) designation with an A72 (2) General Agriculture zone. The General Plan Amendment covers APN's 597-050-13, 597-070-02, and 597-070-07. The GPA request also seeks removal of a segment of a County of San Diego Circulation Element Road, SC 760, which is currently aligned through the project site. SC 760 is a planned two-lane Light Collector Road. The segment of SC 760 proposed for removal with the project extends from SR 94 north to Olive Vista Drive. The project also includes the annexation of the 152.46 acres of the easterly portion of the site into the San Diego County Water Authority and Metropolitan Water District.

Figure 3 shows the conceptual tentative map.

4.0 Project Traffic

4.1 Project Traffic Generation

Trip generation estimates for the residential portion of the development were calculated based on SANDAG rates provided in the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002*. Project trips were calculated using the trip rate for single-family detached estate homes of 12.0 trips/ Dwelling Unit for the 47-new estate residential lots. It should be noted that subsequent to this iteration of the traffic report, the single-family portion of the project has been reduced from 47 to 46 dwelling units. The analysis reflects the more conservative 47 dwelling units. Trip generation for the equestrian facilities and the fire station were estimated based on the typical day-today use since SANDAG rates were not available. **Table 2** shows the total project is calculated to generate approximately 750 ADT with 43 inbound / 46 outbound trips during the AM peak hour and 56 inbound / 46 outbound trips during the PM peak hour.

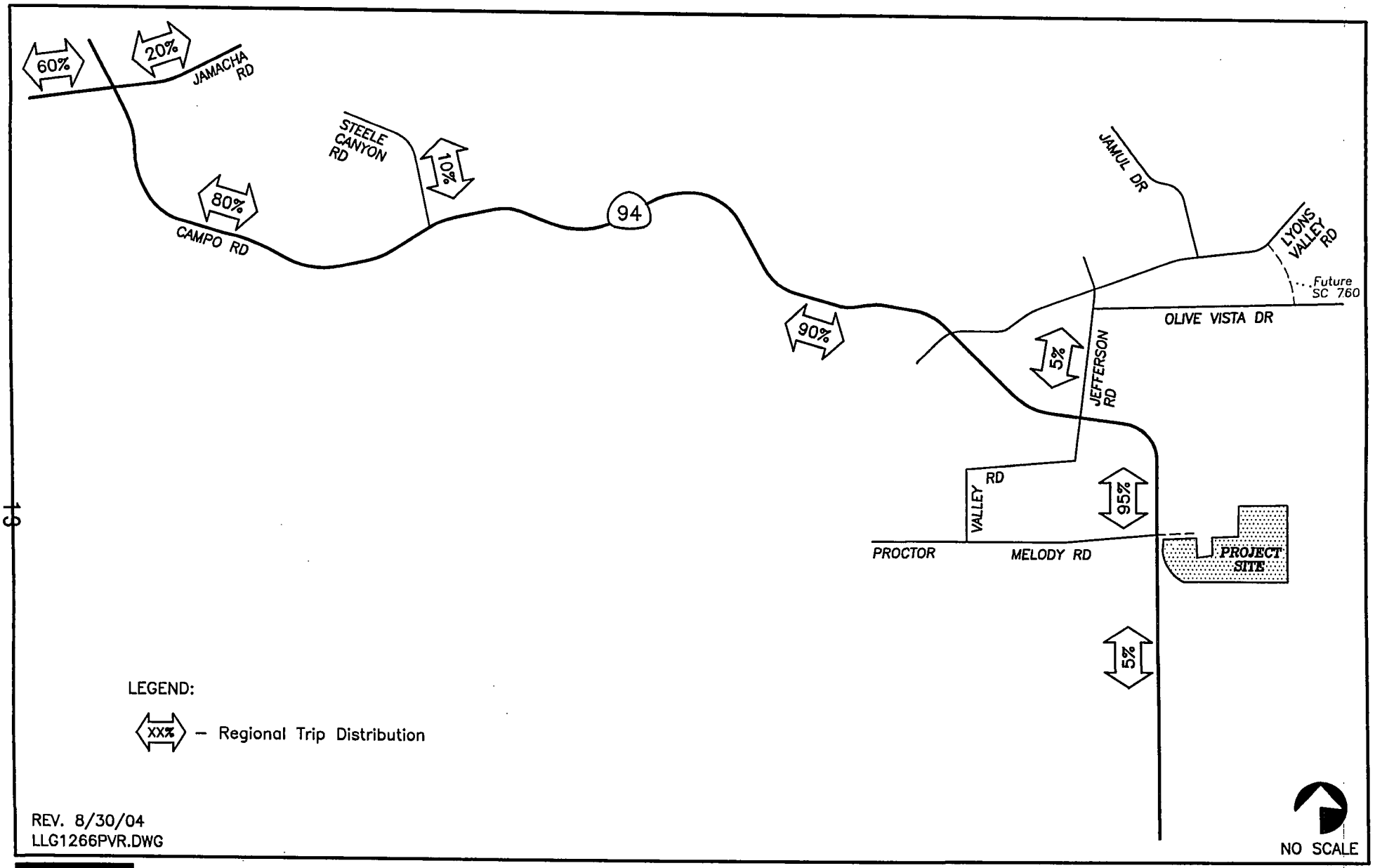
TABLE 2
PROJECT TRIP GENERATION SUMMARY

LAND USE	SIZE	DAILY TRIP ENDS		AM PEAK HOUR TRIPS				PM PEAK HOUR TRIPS			
		RATE[1]	ADT	% of ADT	IN:OUT SPLIT	VOLUME IN	VOLUME OUT	% of ADT	IN:OUT SPLIT	VOLUME IN	VOLUME OUT
Single-Family Homes	47[2]	12.0 / DU[3]	564	8%	30:70	14	31	10%	70:30	39	17
Equestrian Facilities/ Private Horse Stables	-	-	50[4]	-	-	3	3	-	-	3	3
Fire Station[5]	-	-	133	-	-	26	12	-	-	14	26
TOTAL	-	-	**750[6]**			**43**	**46**			**56**	**46**

NOTES:
1 Rate Source except as noted: SANDAG Trip Generation Brief Guide (April, 2002).
2. The 47 units include 46 new residential lots and one existing estate residential lot.
3. DU – Dwelling Unit.
4. Estimated traffic generation based on typical day-to-day activity. SANDAG rates were not available.
5. Traffic generation obtained from a stand-alone traffic study prepared by LLG for the Fire Station (January, 2005).
6. Rounded total ADT

4.2 Project Traffic Distribution /Assignment

The generated project traffic was distributed and assigned to the street system based on project access, the characteristics of the roadway system, and the proximity of the project to employment, retail, and educational opportunities. The vast majority of project traffic is expected to be oriented to/from the north. The project distribution was completed assuming only the existing roadway network (i.e. no SC 760), which provides a worst-case distribution of traffic with the most limited roadway network. **Figure 6** depicts the estimated project traffic distribution in the site environs without SC 760. **Figure 6A** shows the estimated distribution of traffic if SC 760 was constructed. Project traffic was assigned to the surrounding circulation system based on the estimated distribution and is illustrated in **Figure 7**. **Figure 8** shows the existing + project traffic volumes.

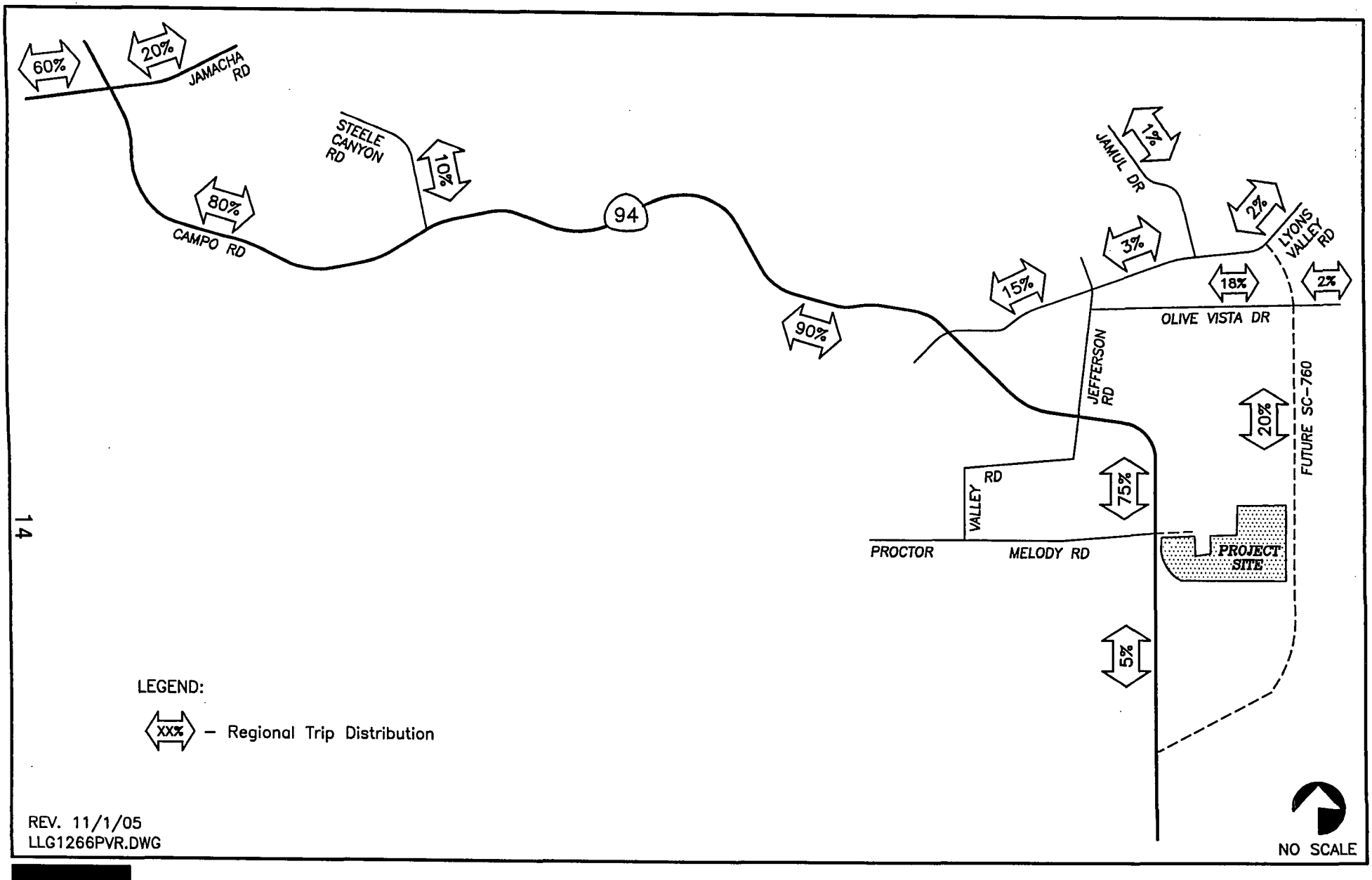


LINSCOTT LAW & GREENSPAN engineers

Figure 6

REGIONAL TRAFFIC DISTRIBUTION WITHOUT THE FUTURE SC 760

PEACEFUL VALLEY RANCH



REV. 11/1/05
LLG1266PVR.DWG

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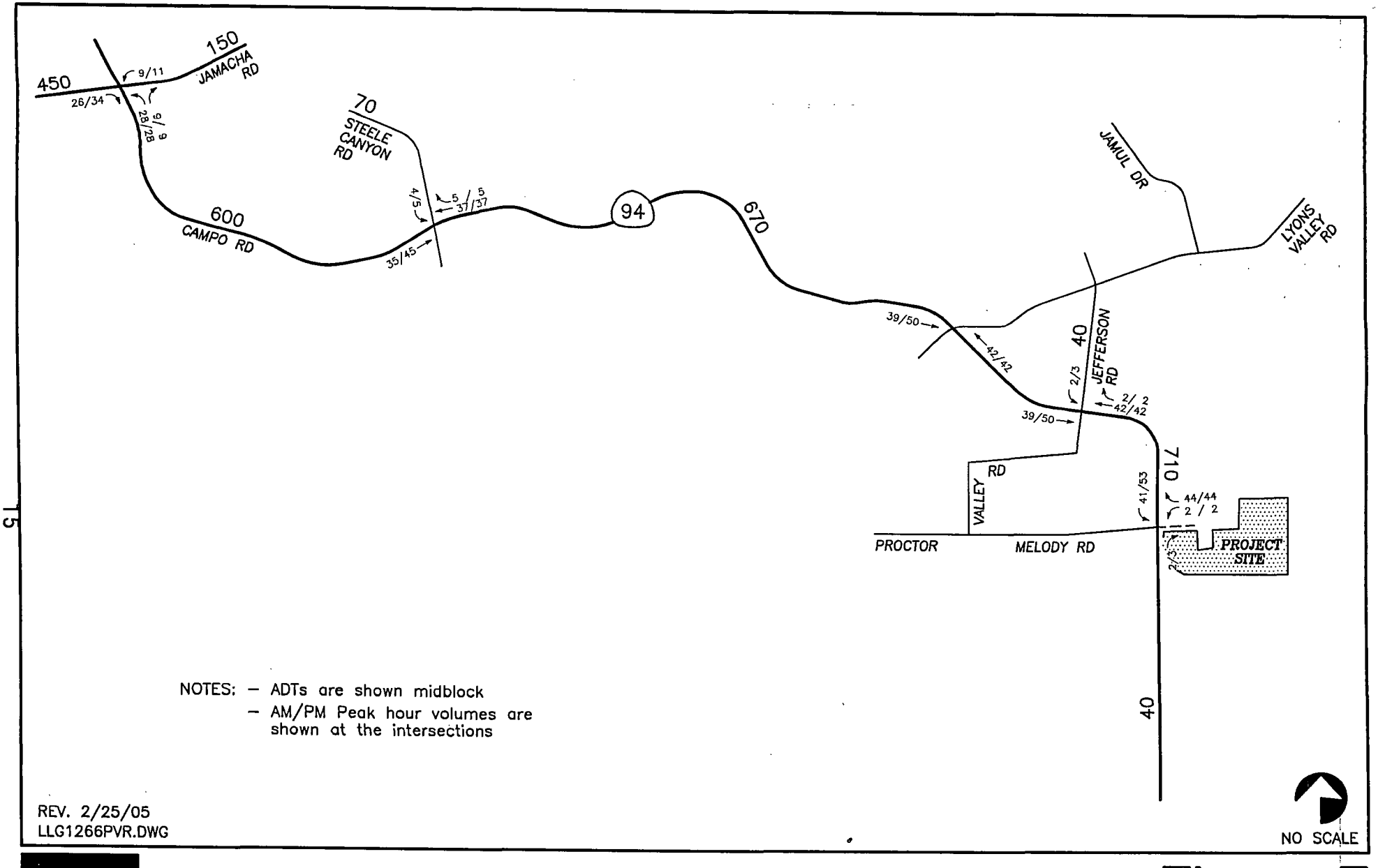
Figure 6a

REGIONAL TRAFFIC DISTRIBUTION WITH SC 760

PEACEFUL VALLEY RANCH



NOTES: – ADTs are shown midblock
– AM/PM Peak hour volumes are shown at the intersections

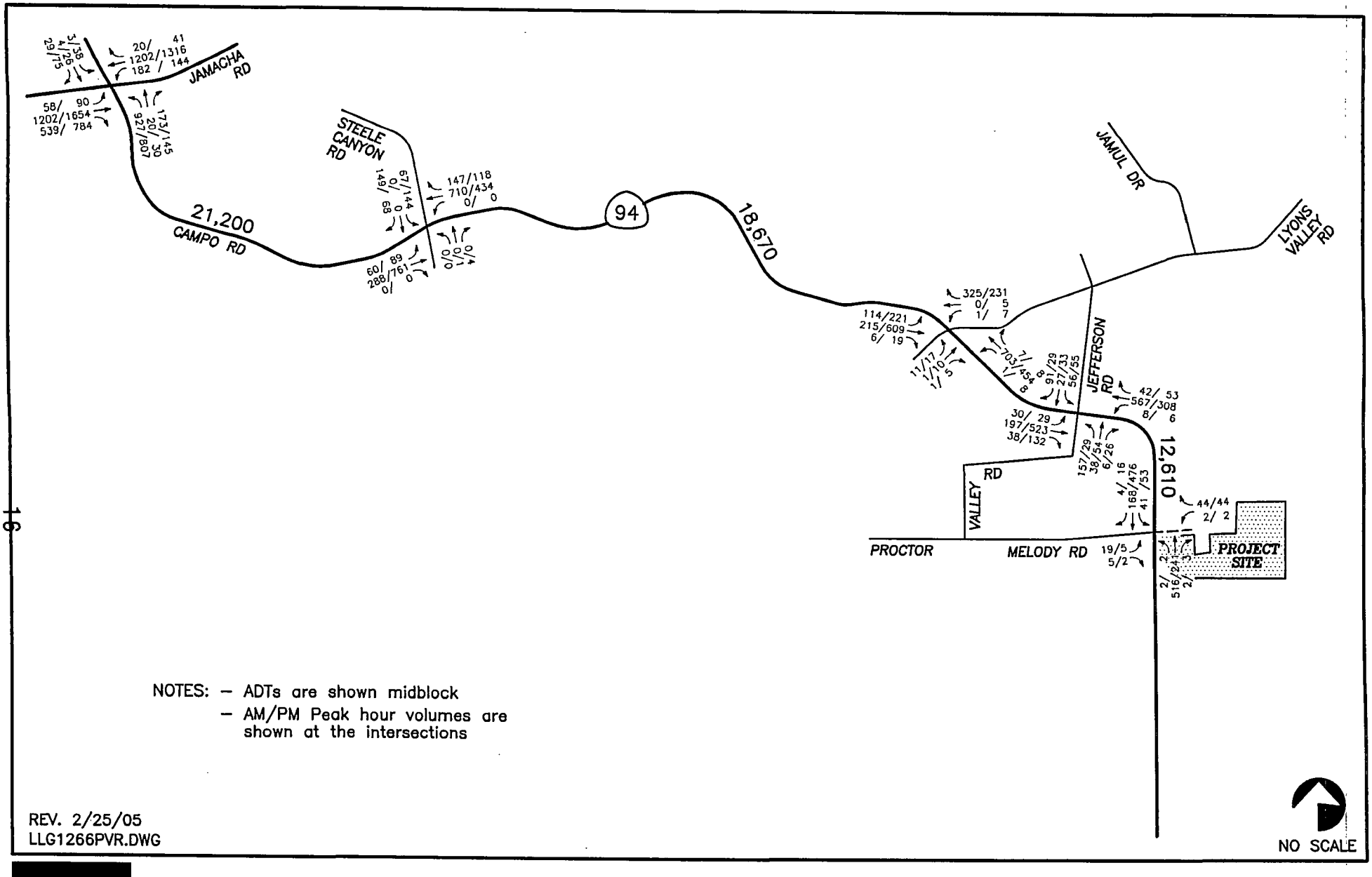
REV. 2/25/05
LLG1266PVR.DWG

LINSCOTT LAW & GREENSPAN engineers

Figure 7

PROJECT TRAFFIC VOLUMES AM/PM PEAK HOURS & ADTs

PEACEFUL VALLEY RANCH



NOTES: – ADTs are shown midblock
– AM/PM Peak hour volumes are shown at the intersections

REV. 2/25/05
LLG1266PVR.DWG

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Figure 8

EXISTING + PROJECT TRAFFIC VOLUMES AM/PM PEAK HOURS & ADTs

PEACEFUL VALLEY RANCH

5.0 Cumulative Projects

There are other planned projects in the vicinity, which could potentially add traffic to the roadways and intersections in the study area. Based on research conducted at the County of San Diego Department of Planning and Land Use (DPLU) and previous traffic reports completed within the project vicinity, fourteen (14) cumulative development projects were identified for inclusion in this traffic study. In addition, to account for any future unforeseen projects, a 10% growth was added to the total cumulative project traffic volumes. The following is a brief description of each cumulative project.

1. **The Jamul Indian Village** is located at the southwest corner of Melody Drive and SR 94. The preferred project proposes to develop a two-story, 265,000 square foot gambling and entertainment facility, and a multi-story parking structure (2,600 spaces). The proposed project is calculated to generate 9,660 daily trip ends (ADT). Traffic data for this project was obtained from a draft traffic study prepared by Katz, Okitzu & Associates (KOA) on November 2002.

   A worst case Retail Alternative is discussed and analyzed in the KOA traffic study. This alternative would generate 37,000 ADT. The proposed casino project was included in the near-term cumulative analysis and both the proposed and worst-case project alternatives are included in the long-term (Year 2030) analysis.

2. **TPM 20550 (Morgan Minor Subdivision)** proposes to construct 2 single-family estate homes. The project site is proposed north of the Procter Valley Road/Poplar Meadow Lane intersection. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 24 ADT with 1-inbound/1 outbound trips during the AM peak hour and 1 inbound/1 outbound trips during the PM peak hour.

3. **TM 5154 RPL1 (Hendrix Subdivision)** is located east of Campo Road on Las Palmas Road. The project proposes to develop 5 single-family estate homes. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 60 ADT with 2 inbound/3 outbound trips during the AM peak hour and 4 inbound/2 outbound trips during the PM peak hour.

4. **TM 5213 RPL2 (Mintz Subdivision)** is located north of Skyline Truck Trail and east of Hidden Trail drive. The project proposes to develop approximately 25 acres of land into 10 single-family estate homes. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 120 ADT with 3 inbound/7 outbound trips during the AM peak hour and 8 inbound/4 outbound trips during the PM peak hour.

5. **TM 5289 RPL2 (Jamul Highlands Subdivision)** proposes to construct 25 single-family estate homes. The project site is proposed south of the Valley Road/Jamul Highlands Road intersection. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 300 ADT with 7 inbound/19 outbound trips during the AM peak hour and 21 inbound/9 outbound trips during the PM peak hour.

6. **TPM 20626 Development** proposes to construct 3 single-family estate homes. The project site is proposed on the west side of Procter Valley Road, just north of the Proctor Valley Road/Melody Road intersection. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 36 ADT with 1 inbound/2 outbound trips during the AM peak hour and 3 inbound/1 outbound trips during the PM peak hour.

7. **TPM 20628 RPL1 (Yacoo Minor Subdivision)** proposes to construct 4 single-family estate homes. The project site is proposed on Schlee Canyon Road north of Procter Valley Road. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 48 ADT with 1 inbound/3 outbound trips during the AM peak hour and 4 inbound/1 outbound trips during the PM peak hour.

8. **A Residential Development** is located just east of the proposed project and south of Olive Vista Drive. The project proposes to develop 20 single-family estate homes. The project is calculated to generate 240 ADT with 6 inbound/13 outbound trips during the AM peak hour and 17 inbound/7 outbound trips during the PM peak hour.

9. **TPM 20599 RPL1 (Blanco Parcel Map)** proposes to construct 4 single-family estate homes. The project site is proposed on the east side of SR 94, north of the Melody Road. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for Estate homes. The project is calculated to generate 48 ADT with 1inbound/3 outbound trips during the AM peak hour and 4 inbound/1 outbound trips during the PM peak hour.

10. **TPM 20868 (Steinbarth Minor Subdivision)** is located just north of the proposed project and south of Olive Vista Drive. The project proposes to develop 2 single-family estate homes. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 24 ADT with 1 inbound/1 outbound trips during the AM peak hour and 1 inbound/1 outbound trips during the PM peak hour.

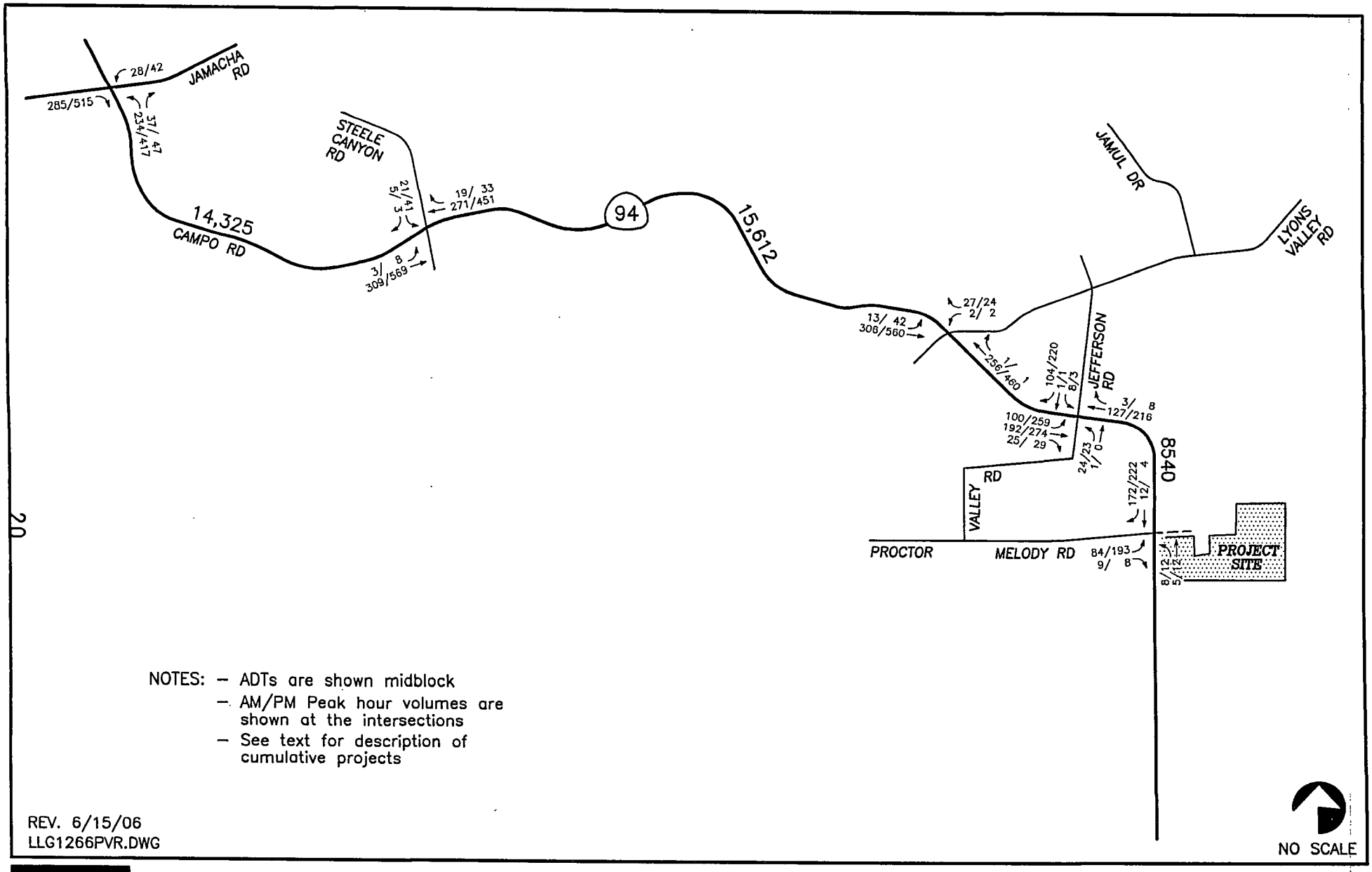
11. **TPM 20594 (Pioneer Minor Subdivision)** is located just west of the proposed project and north of Melody Lane. The project proposes to develop 3 single-family estate homes. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 36 ADT with 1 inbound/2 outbound trips during the AM peak hour and 3 inbound/1 outbound trips during the PM peak hour.

12. **Otay Ranch – Village 19** is located south west of the proposed project and south of Melody Lane. The project proposes to develop 20 single-family estate homes. The project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 240 ADT with 6 inbound/13 outbound trips during the AM peak hour and 17 inbound/7 outbound trips during the PM peak hour.

13. **Jamul Estates II** is located just north east of the proposed project. The maximum allowable developable lots are 68 single-family estate homes based on the current zoning. Therefore, the project was manually calculated using SANDAG's Trip Rates (April, 2002) for estate homes. The project is calculated to generate 816 ADT with 20 inbound/46 outbound trips during the AM peak hour and 57 inbound/24 outbound trips during the PM peak hour.

14. **Simpson Farms** is generally located on the northeast corner of the SR 94 (Campo Road)/Jefferson Road intersection in the Jamul Community of San Diego County. The project proposes to develop 98 single-family estate homes and 115,000 square feet (sf) of commercial uses. The project was calculated to generate approximately 6,500 ADT with approximately 124 inbound/130 outbound trips during the AM peak hour and 323 inbound/275 outbound trips during the PM peak hour.

Appendix B contains the individual assignments for each cumulative project. **Figure 9** shows the total assignment of cumulative project traffic including the 10% growth factor. **Figure 10** shows the existing + project + cumulative projects traffic volumes.



NOTES:
- ADTs are shown midblock
- AM/PM Peak hour volumes are shown at the intersections
- See text for description of cumulative projects

REV. 6/15/06
LLG1266PVR.DWG

LINSCOTT LAW & GREENSPAN engineers

Figure 9

CUMULATIVE PROJECTS TRAFFIC VOLUMES AM/PM PEAK HOURS & ADTs

PEACEFUL VALLEY RANCH

Draft Traffic Impact Study

Jamul Indian Village Gaming Project

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Prepared for:
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14191 Highway 94
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~~February~~November, 2012

KHA NO. 095848000

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4.0 PROJECT TRAFFIC

The following section describes the traffic generation and traffic distribution related to the proposed Jamul Indian Village Gaming project.

Trip Generation

SANDAG's *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (*April, 2002) is a typical source for trip generation estimates for traffic impact studies within the County of San Diego. Another common source for trip generation rates is the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 8th Edition. Unfortunately, neither of these two sources provides rates for gaming facilities. In 2003, the County of San Diego prepared the *Traffic Needs Assessment of Tribal Development Projects in the San Diego Region*, March 2003 Update. For that particular study the County of San Diego reviewed environmental evaluations and traffic impact studies for Indian gaming facilities both inside and outside the County of San Diego. In consultation with private traffic engineering consultants and discussion with representatives from some of the tribes, a trip generation rate of 100 average daily trips per 1,000 square feet of gaming area was agreed as the appropriate trip rate for the traffic evaluations of these types of facilities. The total square footage of the gaming area was used since this was the main attraction of the Tribal Gaming Project facilities and other uses supplement this activity. The supplemental uses are intended to provide support to the gaming facility and will not generate additional daily traffic. Examples of these facilities would be the administrative office, storage, employee area, cage area, public spaces, etc. For the food and beverage ~~s~~ uses, it was determined that SANDAG's trip generation rate for a "Quality Restaurant" was the appropriate rate to use with a 50 percent reduction. This reduction was applied to recognize that the primary attractor of this site is gaming and that the food and beverage establishments are a secondary attraction.

The County of San Diego study established rate for the Indian gaming facility only addresses the daily trip generation, not peak-hour trip rates. ~~KHA~~ Kimley Horn and Associates (KHA) has completed the *Traffic Study for the Graton Rancheria Gaming and Hotel* in Sonoma County, California. As part of this study, KHA researched peak-hour trip generation rates for two other facilities similar to the Jamul Indian Village Gaming project. The facilities investigated were the Auburn Rancheria/Thunder Valley Gaming and Shingle Springs. **Appendix I** contains the trip generation data for the three mentioned casino sites. Based on the research, it was determined that the trip rate used for Shingle Springs is a reasonable, but also more conservative, assumption for this traffic study~~,~~. ~~chosen to eliminate the possibility of underestimating project trips.~~ The Shingle Springs studies used the following peak-hour rates for the trip generation calculation:

- Weekday AM Peak-Hour: 2.95 trips/1,000 square feet of total gaming area
- Weekday PM Peak-Hour: 4.95 trips/1,000 square feet of total gaming area
- Friday/Saturday PM Peak-Hour: 6.9 trips/1,000 square feet of total gaming area

These peak-hour trip generation rates from the Shingle Springs study were found acceptable by Caltrans for the peak-hour traffic estimation for the proposed Jamul Indian Village project based on comparison with the Pauma Casino existing traffic generation. The rates used in this study include the traffic generated by visitors, employees, delivery trucks and other typical activity of the facility.

Table 4-1 displays the trip generation calculation for the Proposed Project development. As shown in the table, the Proposed Project development would generate a total of ~~10,325~~9,000 average daily trips. Table 4-1 also indicates that ~~602~~ 599 (~~422~~ 420 in, ~~180~~ 179 out) trips would occur during the weekday morning peak-hour period. During the weekday afternoon peak-hour period, the project would generate ~~1,010~~1,005 (~~536~~ 533 in, ~~474~~ 472 out) trips. During each of the Friday and Saturday peak-hour periods, the project would generate 1,~~456~~ 401 (~~696~~ 645 in, ~~760~~ 756 out) trips.

TABLE 4-1:
TRIP GENERATION SUMMARY FOR PROPOSED PROJECT
(UPDATED OCTOBER 2012)

					Weekday										Friday and Saturday				
					AM Peak-Hour					PM Peak-Hour					PM Peak-Hour				
Land Use	**Units**		**Trip Rate**	**Daily Trips**	**Trip Rate** [2]	**In:Out Ratio**[2]	**In**	**Out**	**Total**	**Trip Rate** [2]	**In:Out Ratio**[2]	**In**	**Out**	**Total**	**Trip Rate** [2]	**In:Out Ratio**[2]	**In**	**Out**	**Total**
Gaming Area [1]	70.000	ksf	100 / ksf	7,000															
Food and Beverage [3]	40.000	ksf	50 / ksf	2,000															
Gaming Total [4]	**203.000**	**ksf**		**9,000**	2.95 / ksf	0.70 : 0.30	**420**	**179**	**599**	4.95 / ksf	0.53 : 0.47	**533**	**472**	**1,005**	6.9 / ksf	0.46 : 0.54	**645**	**756**	**1,401**
NET TRIP GENERATION =				**9,000**			**420**	**179**	**599**			**533**	**472**	**1,005**			**645**	**756**	**1,401**

Note:
ksf=thousand square feet

1. Reference: San Diego County, *Update on Impacts of Tribal Economic Development Projects in San Diego County, April 2003.*
2. Reference: David Evans and Associates, Inc. and California Department of Transporation, *Transporation/Circulation Technical Study- Shingles Springs Rancheria Interchange Project, April 2002.*
3. For the Food and Beverage use, the SANDAG's trip generation rate for a "Quality Restaunt" was used with a 50 percent reduction. This reduction was applied to recognize that the primary attractor of this site is the gaming facility and that the food and beverage establishments are a secondary attraction.
4. This square footage includes facilities that provides operational support to the gaming facility. Daily trip generation for this support uses are included in the 100 trips/thousand square foot per the San Diego County, *Update on Impacts of Tribal Economic Development Projects in San Diego County,* April 2003. For this facility the additional square footage includes the following: 13.000 ksf of public space, 17.100 ksf of gaming support, 5.000 ksf of cage area space, 13.000 ksf of administration space, 10.000 ksf of employee area space and 34.000 ksf of back-of-house space.

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Table 4-2 displays the trip generation calculation for the Alternative 1 project development. As shown in the table, the Alternative 1 development would generate a total of 4,995 average daily trips. Table 4-2 also indicates that 330 (231 in, 99 out) trips would occur during the morning peak-hour period. During the weekday afternoon peak-hour period, the project would generate 553 (294 in, 259 out) trips. During the Friday and Saturday peak-hour periods, the project would generate 786 (369 in, 417 out) trips. Alternative 1 will include the traffic for a 7,200 square foot Event Center facility.

It should be noted that the traffic generation for the Proposed Project development includes traffic generated by a 24,000 square foot Event Center facility. For the daily traffic generation for the Event Center, a 40 trips per 1,000 square foot rate was used based on the *Updates on Impacts of Tribal Economic Development Project in San Diego County*, April 2003, study. For the peak-hour generation of the Event Center, it was assumed that approximately 10 percent of the traffic generated by this use would arrive to the facility during the afternoon peak-hour analyzed during only Fridays and Saturdays. The Event Center would not generate peak-hour volumes during the typical weekday. The 10 percent assumption was based on the fact that most events would have a start time of 7:30 p.m.

Table 4-3 displays the trip generation calculation for the Alternative 2 project development. As shown in the table, the Alternative 2 development would generate a total of 1,189 average daily trips. Table 4-3 also indicates that 52 (37 in, 15 out) trips would occur during the morning peak-hour period. During the weekday afternoon peak-hour analyzed, the project would generate 87 (46 in, 41 out) trips. During the Friday and Saturday peak-hour periods analyzed, the project would generate 121 (56 in, 65 out) trips. Alternative 2 will not include the Event Center facility.

Trip Distribution

Two project trip distributions patterns were generated for the Jamul Indian Village project. One distribution pattern was generated for the Near Term conditions, which would also include the existing plus project conditions. This distribution pattern represents the likely traffic patterns of Gaming traffic based on the existing land use densities and roadway network within the vicinity of the project site. The basis of the distribution for the Near Term conditions was a Select Zone model run prepared by SANDAG for the Tribal Gaming site for the Year 2015. **Figure 4-1** displays the assumed Jamul Indian Village Gaming project traffic distribution for the Existing (2009) and Near Term (2015) conditions.

A second Select Zone model run was prepared by SANDAG for the Year 2030 scenario. This new distribution includes more development to the south of SR-94 and therefore assumes more traffic coming from and to the south. **Figure 4-2** displays the assumed Jamul Indian Village Gaming project traffic distribution for the Horizon Year 2035 conditions.

Figures 4-3 and **Figure 4-4** display the assumed project traffic distributions through the study intersections within the study area for the Near Term (2015) and Horizon Year (2035) conditions, respectively.

Trip Assignment

Based on the Jamul Indian Village Gaming project trip distributions, project related trips were assigned to the roadway network and through the study intersections. **Figures 4-5** thru **4-22** illustrate the project trip assignment for the weekday morning and afternoon peak periods, the Friday and Saturday afternoon peak period and the typical weekday daily trip assignment for both the Near Term and Horizon Year conditions.

TABLE 4-2:
TRIP GENERATION SUMMARY FOR ALTERNATIVE 1
(UPDATED OCTOBER 2012)

					Weekday										Friday and Saturday				
					AM Peak-Hour					PM Peak-Hour					PM Peak-Hour				
Land Use	**Units**		**Trip Rate[1]**	**Daily Trips**	**Trip Rate [2]**	**In:Out Ratio[2]**	**In**	**Out**	**Total**	**Trip Rate [2]**	**In:Out Ratio[2]**	**In**	**Out**	**Total**	**Trip Rate [2]**	**In:Out Ratio[2]**	**In**	**Out**	**Total**
Gaming Area [(1)]	37.550	ksf	100 / ksf	3,755															
Food and Beverage [(3)]	19.040	ksf	50 / ksf	952															
Gaming Total [(4)]	**111.800**	**ksf**		**4,707**	2.95 / ksf	0.70 : 0.30	**231**	**99**	**330**	4.95 / ksf	0.53 : 0.47	**294**	**259**	**553**	6.9 / ksf	0.46 : 0.54	**355**	**416**	**771**
Event Center [(1)]	**7.200**	**ksf**	40 / ksf	**288**	See note 5					See note 5					2 / ksf	1.00 : 0.00	**14**	**1**	**14**
Total Square footage	**119.000**	**ksf**																	
NET TRIP GENERATION =				**4,995**			**231**	**99**	**330**			**294**	**259**	**553**			**369**	**417**	**786**

Note:
ksf=thousand square feet

1. Reference: San Diego County, *Update on Impacts of Tribal Economic Development Projects in San Diego County, April 2003.*
2. Reference: David Evans and Associates, Inc. and California Department of Transporation, *Transporation/Circulation Technical Study- Shingles Springs Rancheria Interchange Project, April 2002.*
3. For the Food and Beverage use, the SANDAG's trip generation rate for a "Quality Restaunt" was used with a 50 percent reduction. This reduction was applied to recognize that the primary attractor of this site is the gaming facility and that the food and beverage establishments are a secondary attraction.
4. This square footage includes facilities that provides operational support to the gaming facility. Daily trip generation for this support uses are included in the 100 trips/thousand square foot per the San Diego County, *Update on Impacts of Tribal Economic Development Projects in San Diego County* , April 2003. For this facility the additional square footage includes the following: 7.908 ksf of public space, 11.610 ksf of Gaming support space, 4.831 ksf of cage area space, 8.269 ksf of administration space, 12.875 ksf of storage area space and 9.717 ksf of employee area space.
5. This use will not generate peak-hour trips during a typical weekday.

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TABLE 4-3:
TRIP GENERATION SUMMARY FOR ALTERNATIVE 2
(UPDATED OCTOBER 2012)

Land Use	Units	Trip Rate	Daily Trips	Weekday									Friday and Saturday				
				AM Peak-Hour					PM Peak-Hour					PM Peak-Hour				
				Trip Rate [2]	In:Out Ratio[2]	In	Out	Total	Trip Rate [2]	In:Out Ratio[2]	In	Out	Total	Trip Rate [2]	In:Out Ratio[2]	In	Out	Total
Gaming Area [(1)]	11.376 ksf	100 / ksf	1,138															
Food and Beverage [(3)]	1.019 ksf	50 / ksf	51															
Gaming Total [(4)]	**17.500 ksf**		**1,189**	2.95 / ksf	0.70 : 0.30	**37**	**15**	**52**	4.95 / ksf	0.53 : 0.47	**46**	**41**	**87**	6.9 / ksf	0.46 : 0.54	**56**	**65**	**121**
NET TRIP GENERATION =			**1,189**			**37**	**15**	**52**			**46**	**41**	**87**			**56**	**65**	**121**

Note:
ksf=thousand square feet

1. Reference: San Diego County, *Update on Impacts of Tribal Economic Development Projects in San Diego County, April 2003.*
2. Reference: David Evans and Associates, Inc. and California Department of Transporation, *Transporation/Circulation Technical Study- Shingles Springs Rancheria Interchange Project, April 2002.*
3. For the Food and Beverage use the SANDAG's trip generation rate for a "Quality Restaunt" was used with a 50 percent reduction. This reduction was applied to recognize that the primary attractor of this site is the gaming facility and that the food and beverage establishments are a secondary attraction.
4. This square footage includes facilities that provides operational support to the gaming facility. Daily trip generation for this support uses are included in the 100 trips/thousand square foot per the San Diego County, *Update on Impacts of Tribal Economic Development Projects in San Diego County*, April 2003. For this facility the additional square footage includes the following: 1.140 ksf of public space, 1.6 ksf of Gaming support space, and 2.365 ksf of employee area space.

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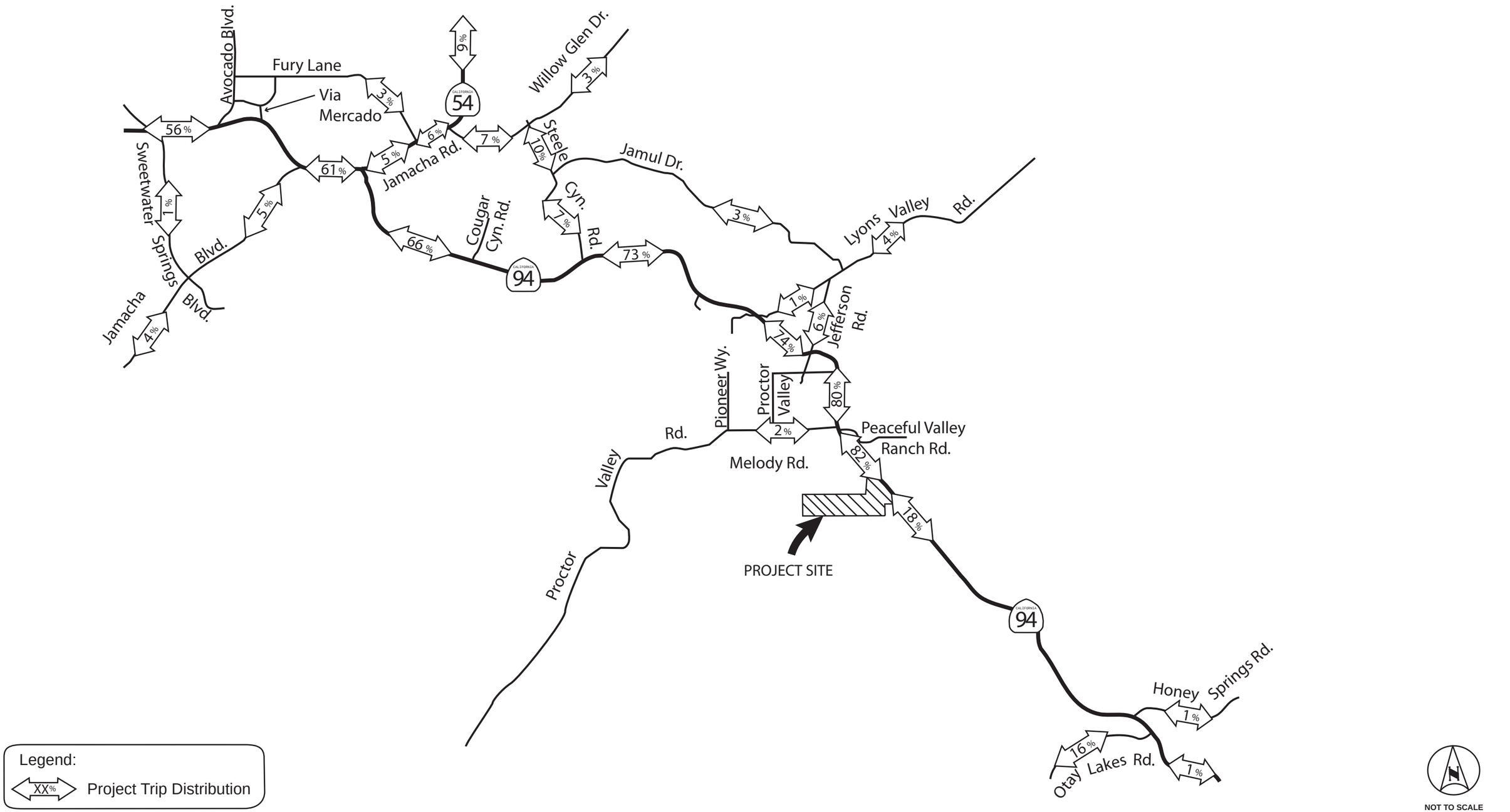

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FIGURE 4-1
Project Trip Distribution for Near-Term Conditions (Updated October 2012)

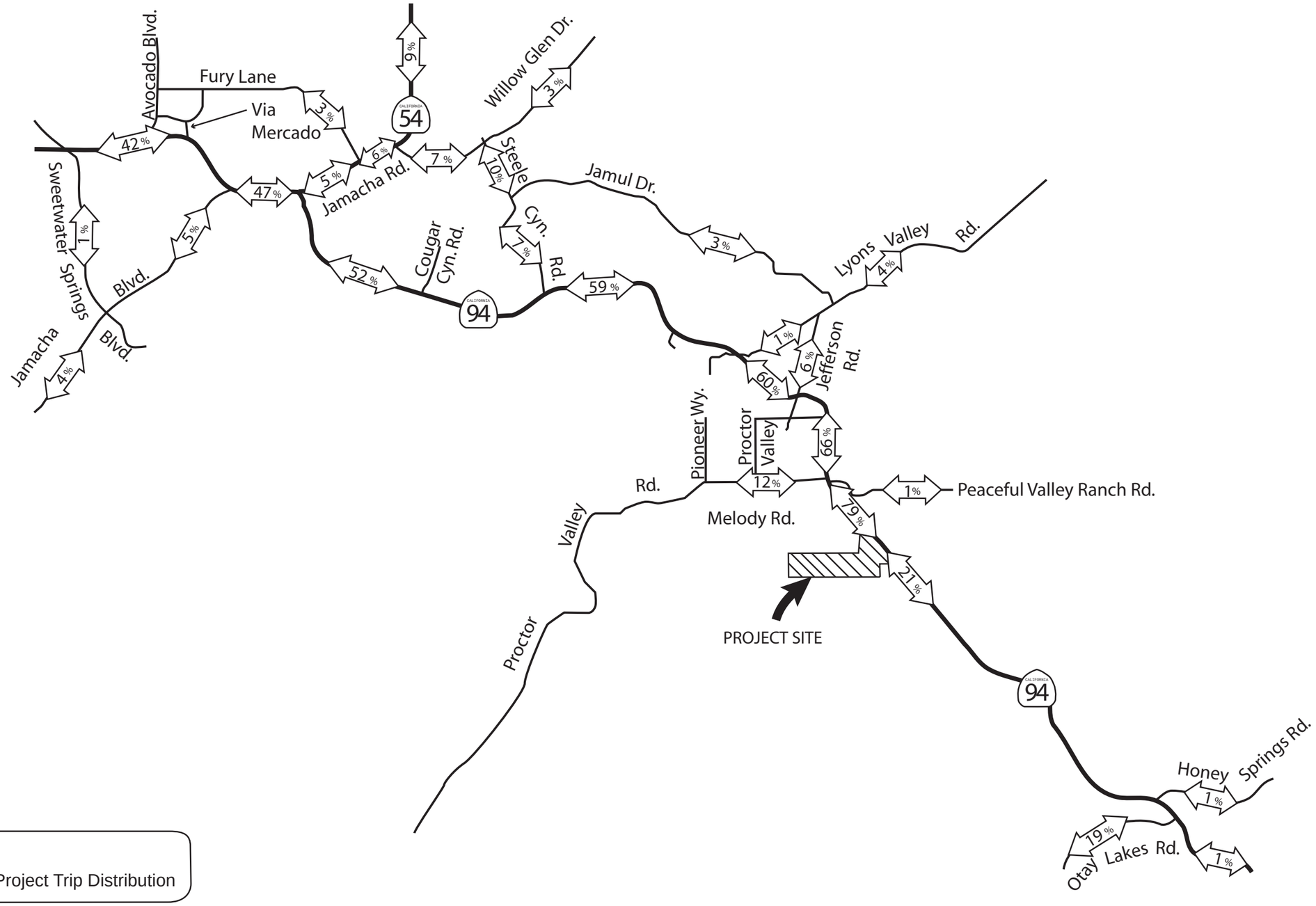

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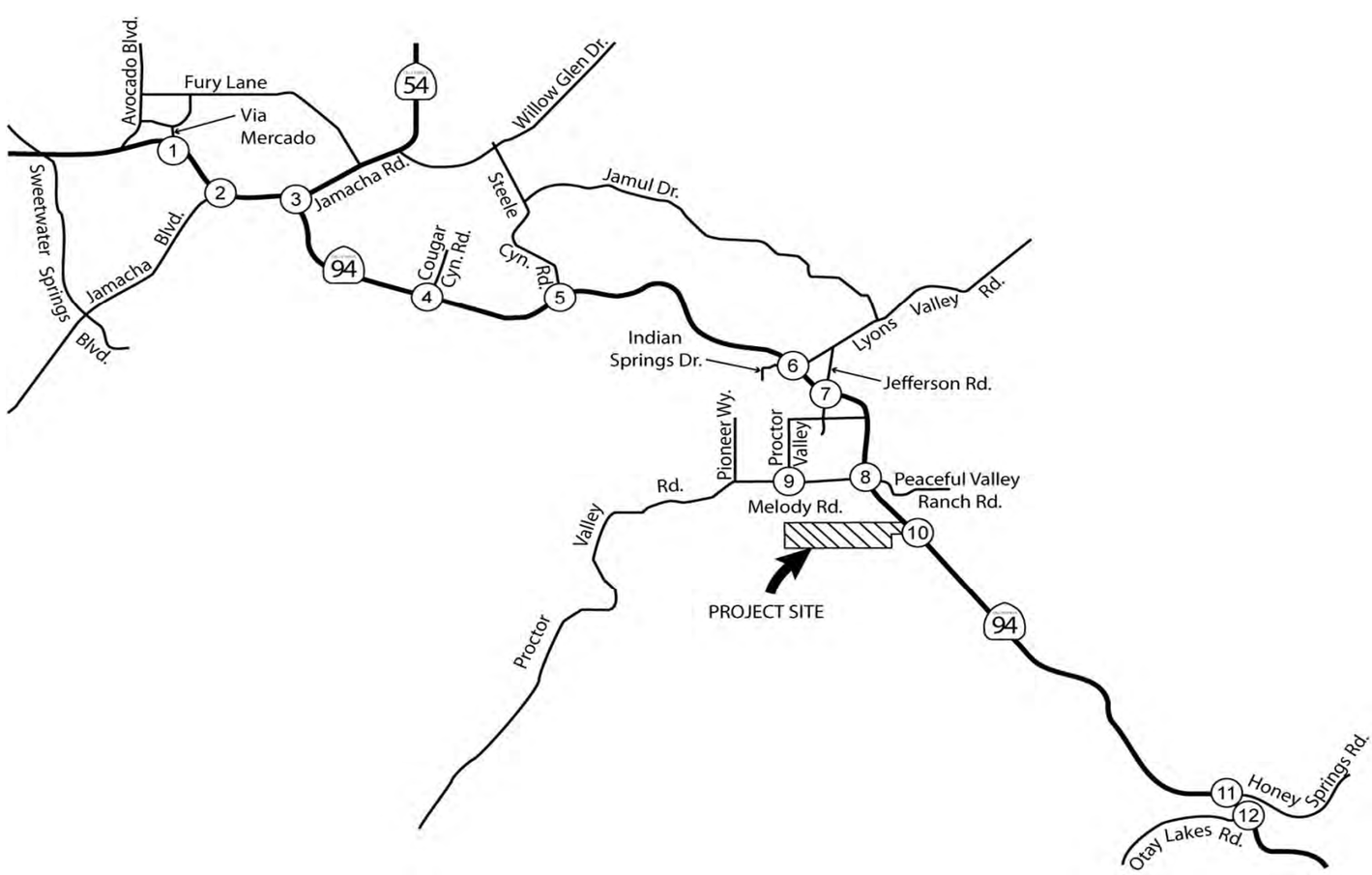
FIGURE 4-2
Project Trip Distribution for Horizon-Year Conditions (Updated October 2012)

Jamul Indian Village (Updated October 2012)

1 Via Mercado: ⇦ (56%) SR 94 56% ⇨	**2** Jamacha Blvd.: ⇦ (56%) ⬀ (5%) SR 94 56% ⇨ ⬀ 5%	**3** SR 94 Dwy.: ⬀ 5% Jamacha Rd. 61% ⬁ SR 94 ⬀ (61%) ⬀ (5%)	**4** Cougar Canyon Rd.: ⇦ (66%) SR 94 66% ⇨
5 Steele Canyon Rd.: ⬁ 7% ⬀ (7%) ⇦ (66%) SR 94 66% ⇨	**6** Lyons Valley Rd.: ⬁ 1% ⬀ (1%) ⇦ (73%) SR 94 73% ⇨ Indian Springs Dr.	**7** Jefferson Rd.: ⬁ 6% ⬀ (6%) ⇦ (74%) SR 94 74% ⇨ Proctor Valley Rd.	**8** SR 94: ⇩ 80% Melody Rd. Peacefull Valley Ranch Rd. 2% ⬁ ⬀ (2%) ⇧ (80%)
9 Proctor Valley Rd.: ⇦ (2%) Melody Rd. 2% ⇨	**10** SR 94: ⬀ 82% Reservation Rd. (82%) ⬀ (18%) ⬁ ⬀ 18%	**11** SR 94: ⇦ (17%) ⬁ (1%) ⬀ 1% Honey Springs Rd. ⇧ 17%	**12** SR 94: ⬁ (16%) ⇩ (1%) Otay Lakes Rd. 16% ⬀ ⇧ 1%



Legend

X% / (Y%) = IN / OUT PERCENT DISTRIBUTION

NOT TO SCALE

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FIGURE 4-3

Project Trip Distribution for Near Term (2015) Conditions -Study Intersections

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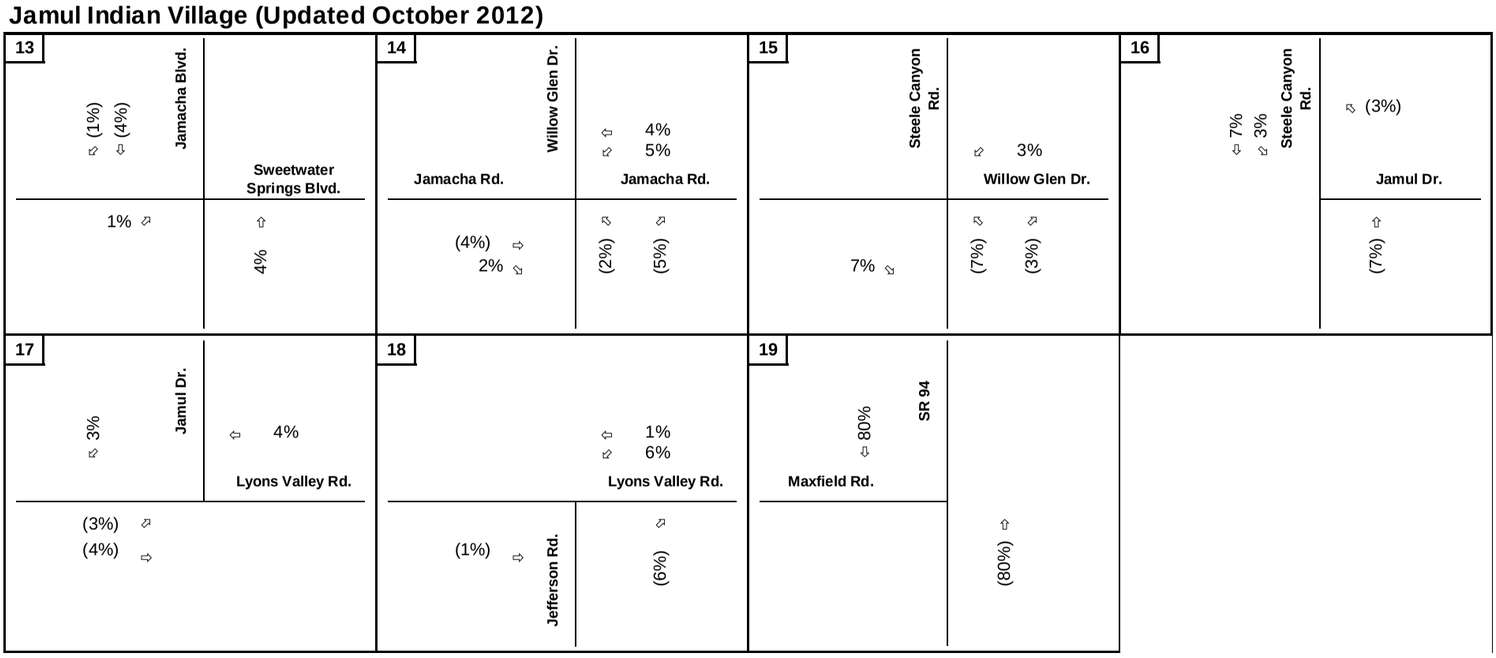
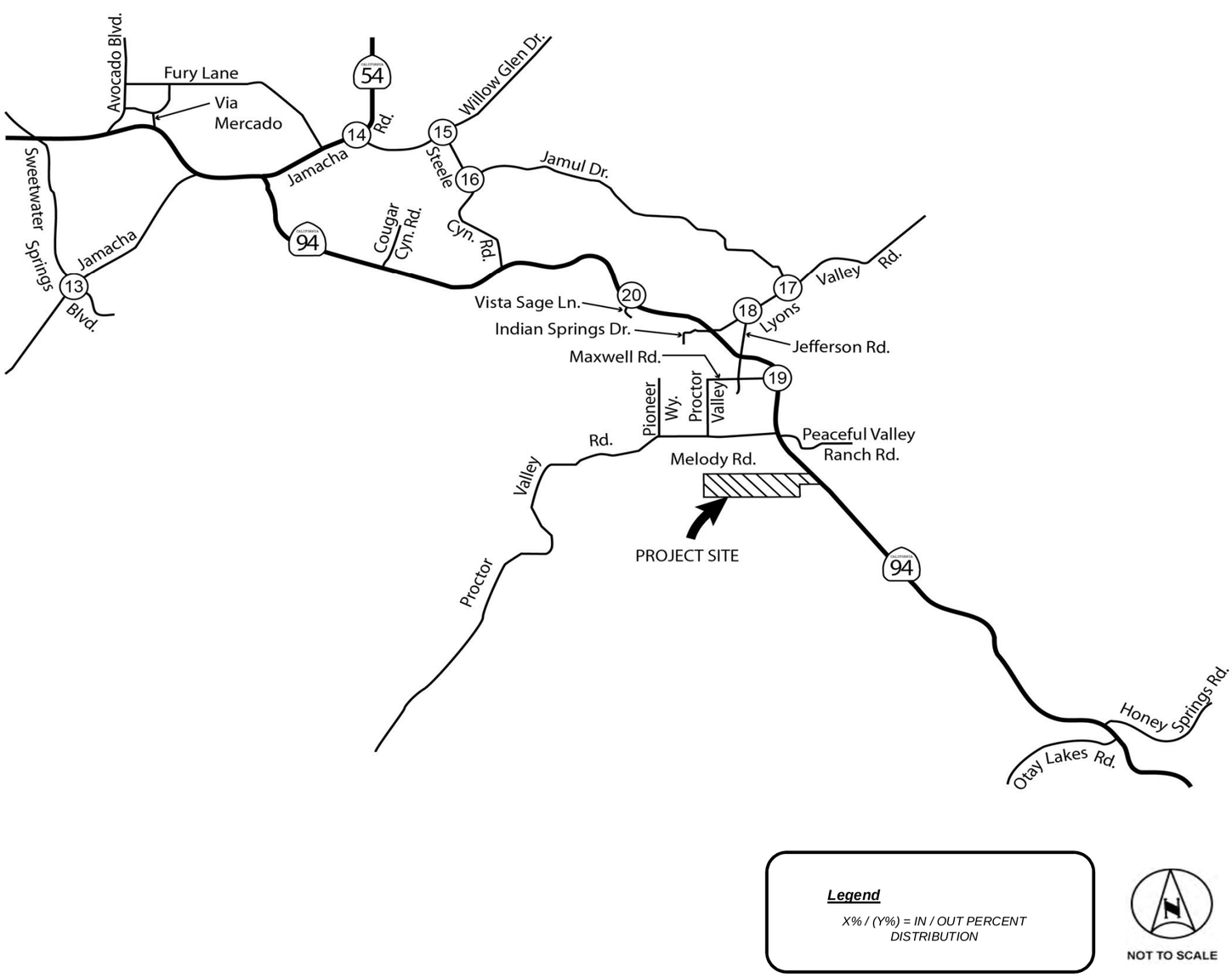
Jamul Indian Village (Updated October 2012)





Legend

X% / (Y%) = IN / OUT PERCENT DISTRIBUTION

NOT TO SCALE

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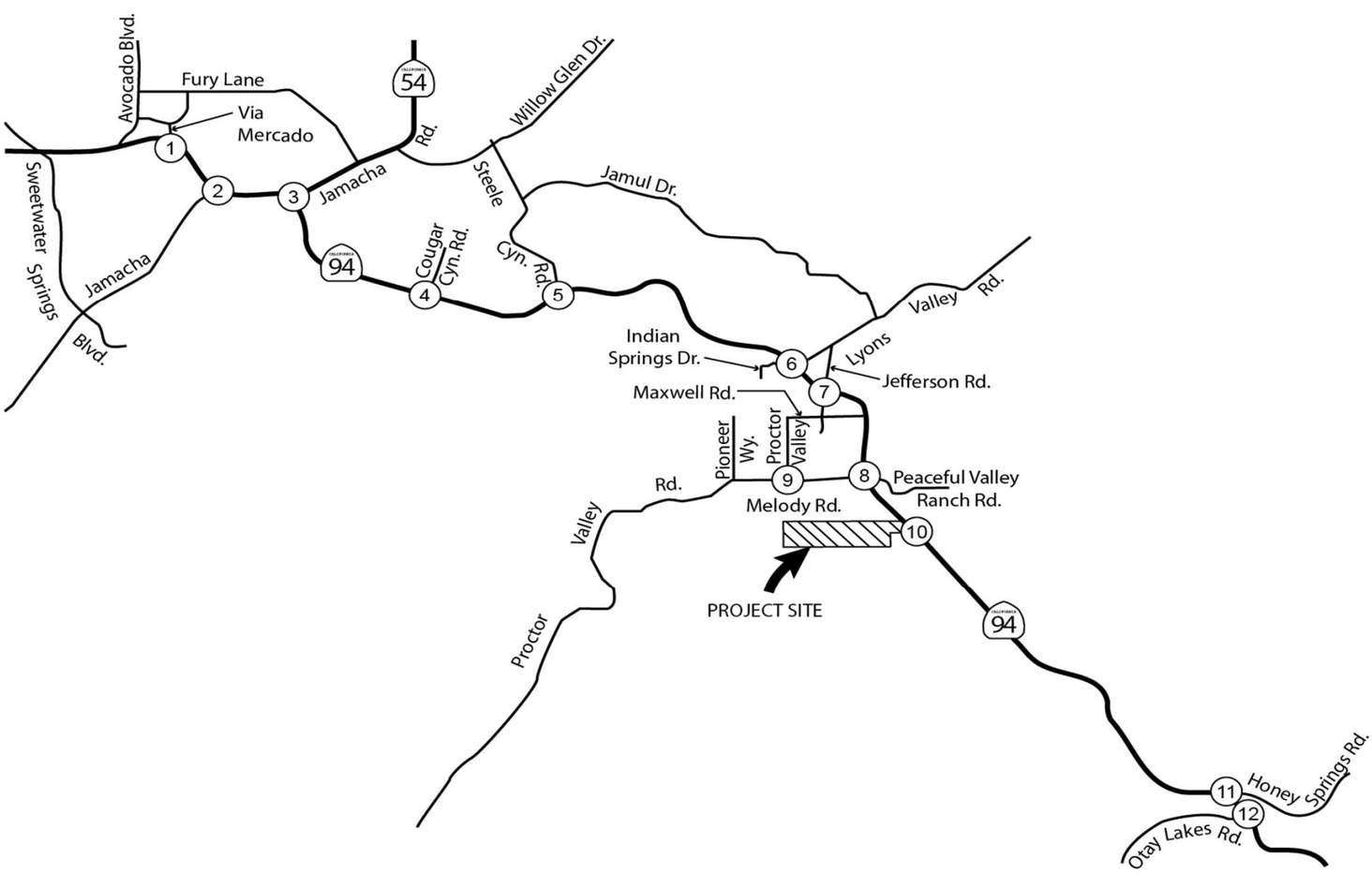
FIGURE 4-3.1

Project Trip Distribution for Near Term (2015) Conditions -Study Intersections (cont.)

K:\SND_TPTO\095848000\Excel\[848000TA01.xlsm]Dist NT 13-19

Jamul Indian Village (Updated October 2012)

1 Via Mercado: ⇦ (42%) SR 94 42% ⇨	**2** Jamacha Blvd.: ⇦ (42%) ⇖ (5%) SR 94 42% ⇨ ; 5% ⇖	**3** SR 94 Dwy.: ⇖ 5% Jamacha Rd. 47% ⇘ SR 94 ; (47%) ⇗ (5%) ⇖	**4** Cougar Canyon Rd.: ⇦ (52%) SR 94 52% ⇨
5 Steele Canyon Rd.: ⇗ 7% ⇦ (7%) ⇦ (52%) SR 94 52% ⇨	**6** Lyons Valley Rd.: ⇗ 1% ⇦ (1%) ⇦ (59%) SR 94 59% ⇨ Indian Springs Dr.	**7** Jefferson Rd.: ⇗ 6% ⇦ (6%) ⇦ (60%) SR 94 60% ⇨ Proctor Valley Rd.	**8** SR 94: ⇩ 66% ⇗ 1% Melody Rd. / Peacefull Valley Ranch Rd. 12% ⇘ ; (12%) ⇗ (66%) ⇧ (1%) ⇗
9 Proctor Valley Rd.: ⇦ (12%) Melody Rd. 12% ⇨	**10** SR 94: ⇦ 79% Reservation Rd. (79%) ⇗ (21%) ⇘ ; 21% ⇗	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes Road and the intersection of SR-94	**12** SR 94: ⇦ (19%) ⇩ (1%) ⇗ (1%) Otay Lakes Rd. / Honey Springs Rd. 19% ⇗ ; ⇧ 1%



Legend

X% / (Y%) = IN / OUT PERCENT DISTRIBUTION

NOT TO SCALE

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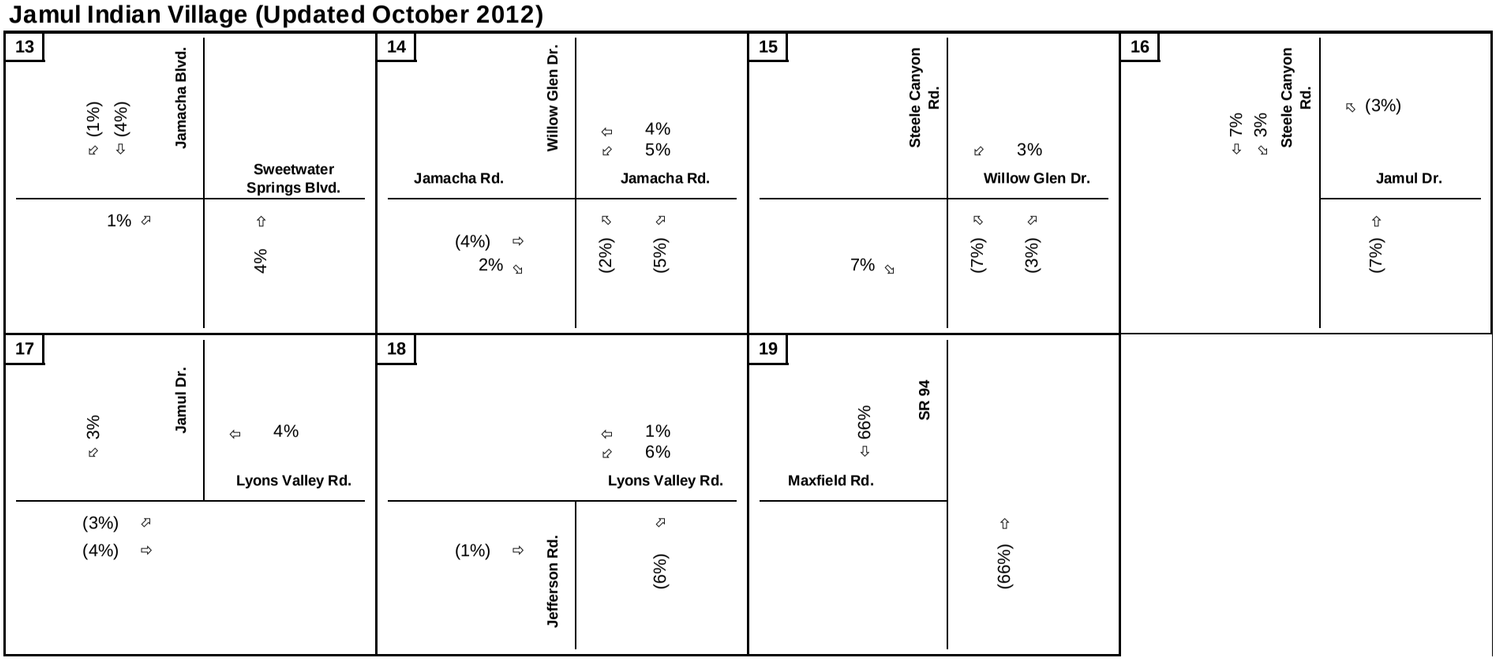
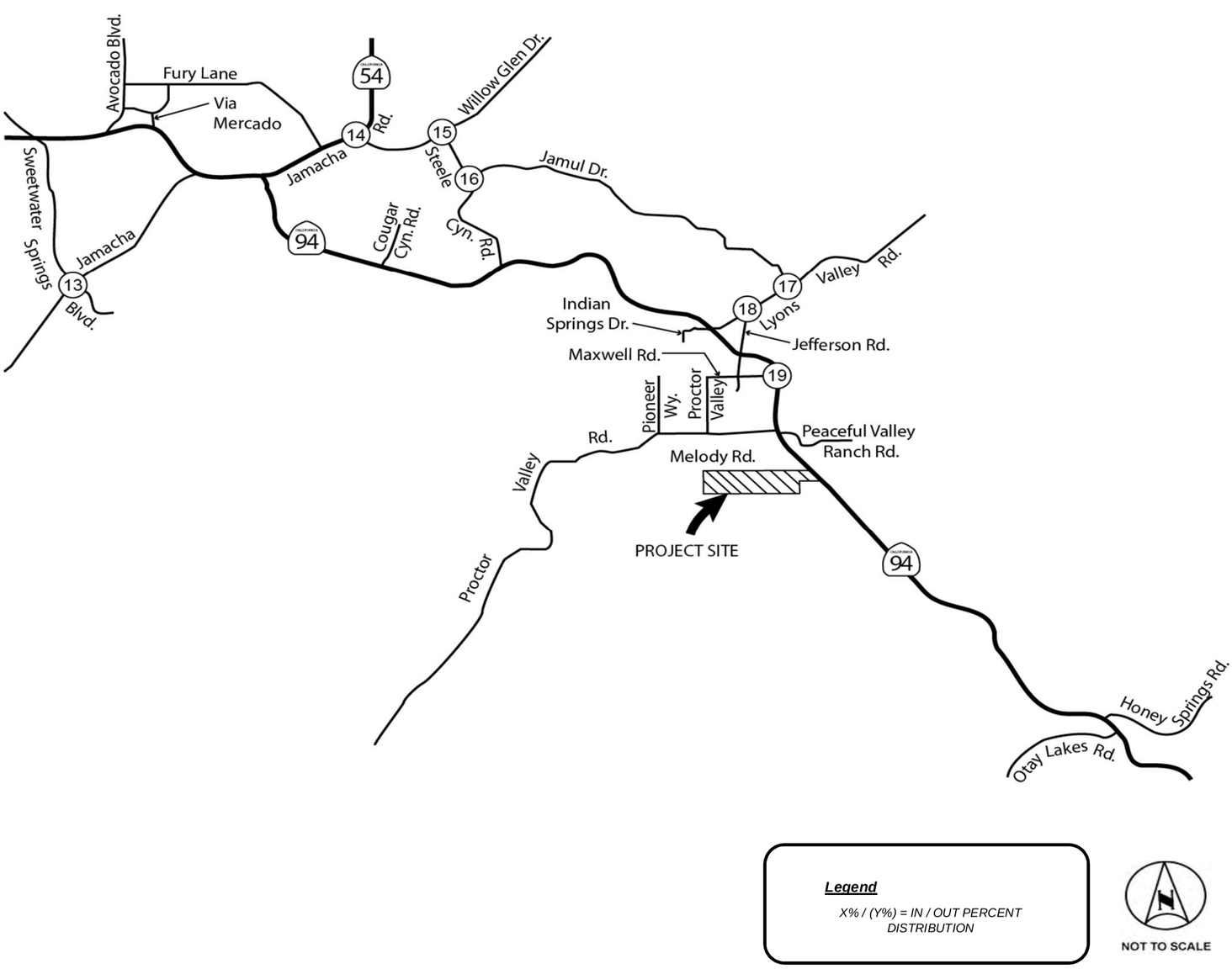
FIGURE 4-4

Project Trip Distribution for Horizon Year (2035) Conditions -Study Intersections

K:\SND_TPTO\095848000\Excel\[848000TA01.xlsm]Dist BO 1-12

Jamul Indian Village (Updated October 2012)





Legend

X% / (Y%) = IN / OUT PERCENT DISTRIBUTION

NOT TO SCALE

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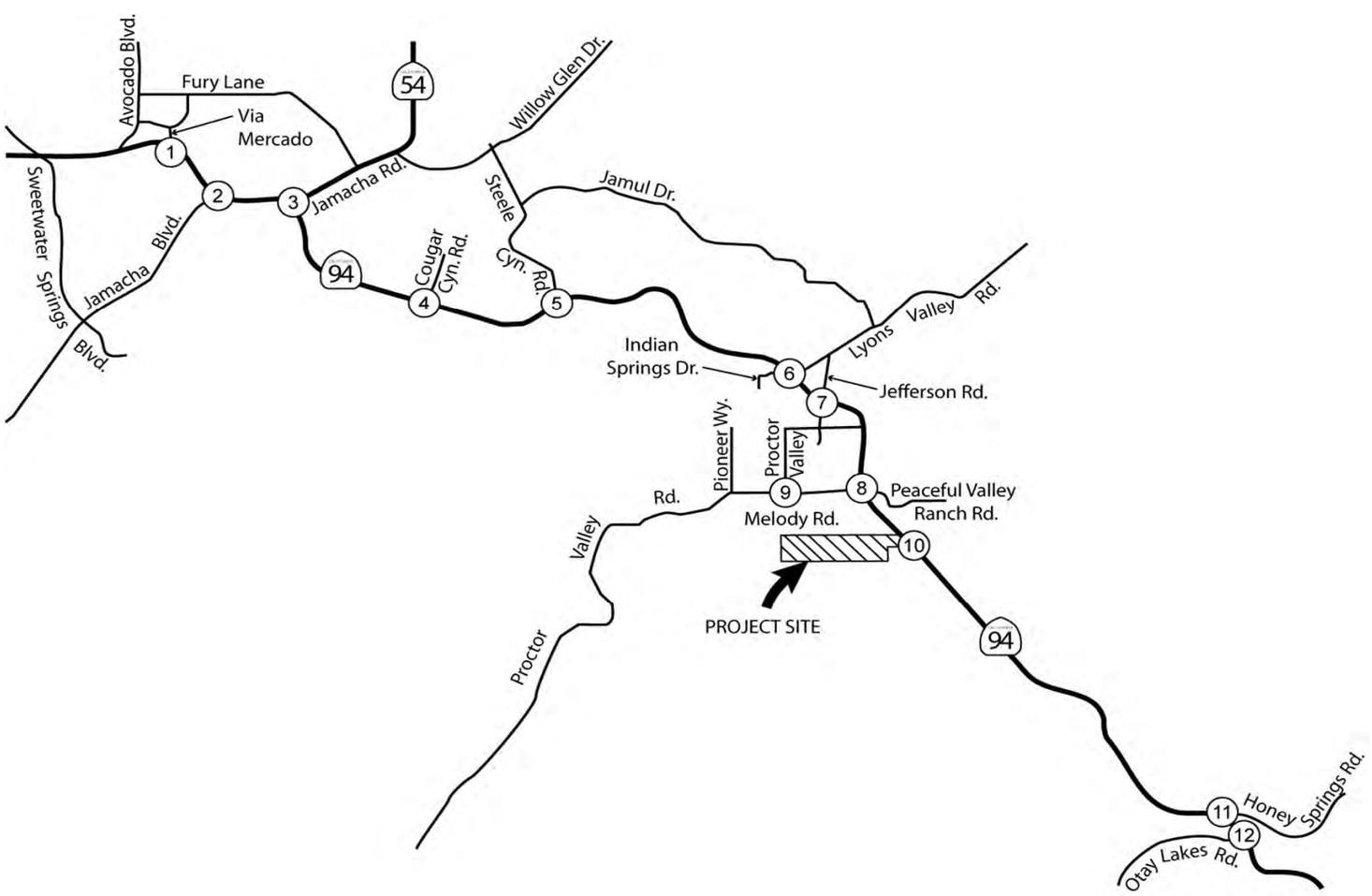
FIGURE 4-4.1

Project Trip Distribution for Horizon Year (2035) Conditions -Study Intersections (cont.)

K:\SND_TPTO\095848000\Excel\[848000TA01.xlsm]Dist BO 13-19

Jamul Indian Village (Updated October 2012)

1	Via Mercado	⇦ 100 / 264 SR 94	**2**	Jamacha Blvd.	⇦ 100 / 264 ⇖ 9 / 24 SR 94	**3**	Dwy. SR 94 ⇖ 21 / 27 Jamacha Rd.
235 / 298 ⇨			235 / 298 ⇨		⇗ 21 / 27	256 / 325 ⇘ SR 94	⇗ 109 / 288 ⇗ 9 / 24
4	Cougar Canyon Rd.	⇦ 118 / 311 SR 94	**5**	29 / 37 ⇙ Steele Canyon Rd.	⇗ 13 / 33 ⇦ 118 / 311 SR 94	**6**	4 / 5 ⇙ Lyons Valley Rd. ⇗ 2 / 5 ⇦ 131 / 344 SR 94
277 / 352 ⇨			277 / 352 ⇨			307 / 389 ⇨	Indian Springs Dr.
7	25 / 32 ⇙ Jefferson Rd.	⇗ 11 / 28 ⇦ 132 / 349 SR 94	**8**	336 / 426 ⇩ SR 94 Melody Rd.	Peacefull Valley Ranch Rd.	**9**	Proctor Valley Rd. ⇦ 4 / 9 Melody Rd.
311 / 394 ⇨	Proctor Valley Rd.		8 / 11 ⇘		⇗ 4 / 9 ⇧ 143 / 377	8 / 11 ⇨	
10	344 / 437 ⇗ SR 94 Reservation Rd.		**11**	30 / 80 ⇩ 2 / 5 ⇗ SR 94	⇗ 4 / 5 Honey Springs Rd.	**12**	29 / 75 ⇗ 2 / 5 ⇩ SR 94 Otay Lakes Rd.
147 / 387 ⇗		⇗			⇧	67 / 85 ⇗	⇧
32 / 85 ⇗		76 / 96			71 / 91		4 / 5



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

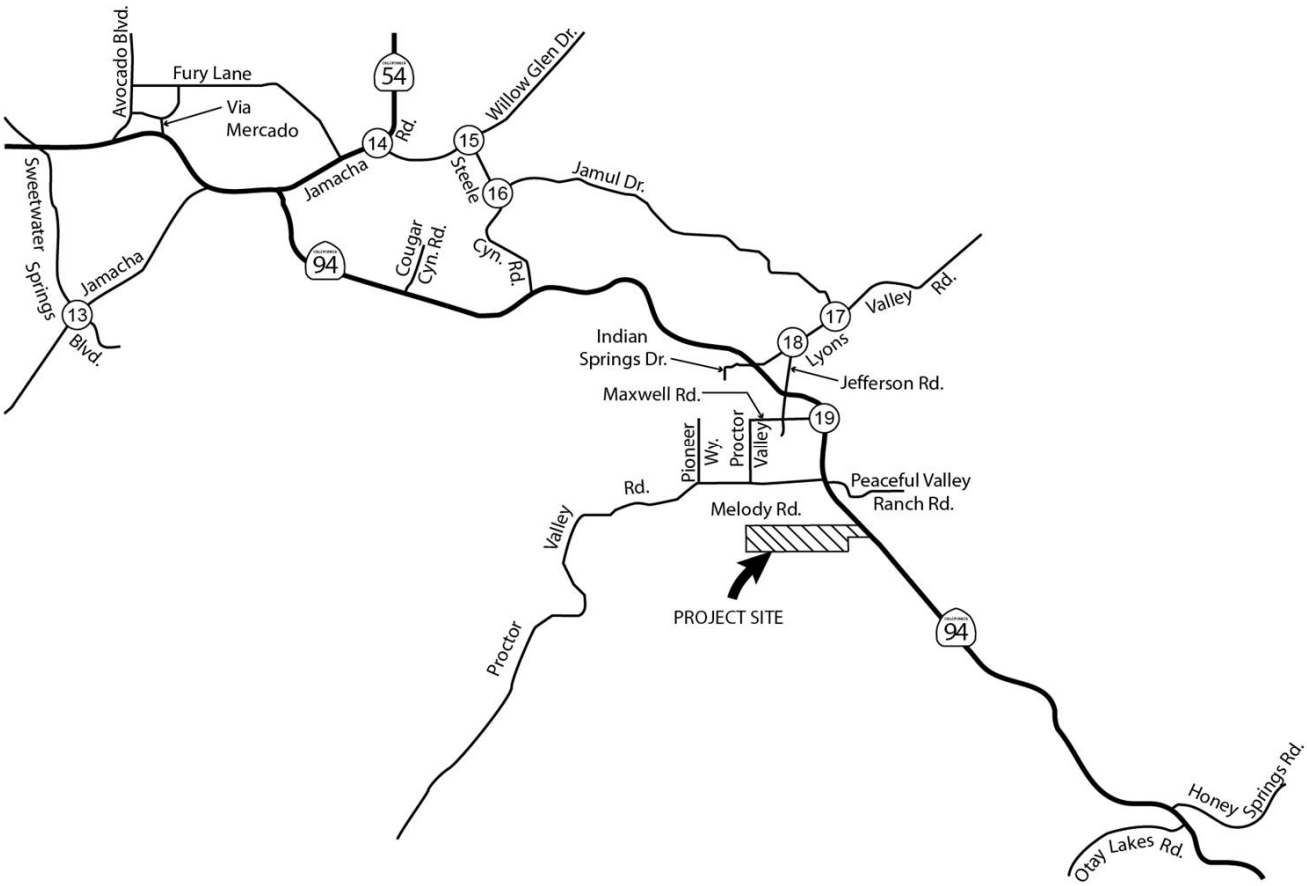
FIGURE 4-5

Proposed Project Assignment for Near Term (2015) Conditions -Study Int.(Weekday)

K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]NT Proj Assign Fig1-12 weekday

Jamul Indian Village (Updated October 2012)

13	2 / 5 7 / 19 Jamacha Blvd.	Sweetwater Springs Blvd.	14	Willow Glen Dr.	17 / 21 21 / 27 Jamacha Rd.	15	Steele Canyon Rd.	13 / 16 Willow Glen Dr.	16	29 / 37 13 / 16 Steele Canyon Rd.	5 / 14 Jamul Dr.
4 / 5	17 / 21		7 / 19 8 / 11	4 / 9 9 / 24		29 / 37	13 / 33 5 / 14			13 / 33	
17	13 / 16 Jamul Dr.	17 / 21 Lyons Valley Rd.	18	4 / 5 25 / 32 Lyons Valley Rd.		19	336 / 426 SR 94 Maxfield Rd.				
5 / 14 7 / 19			2 / 5 Jefferson Rd.	11 / 28				143 / 377			



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

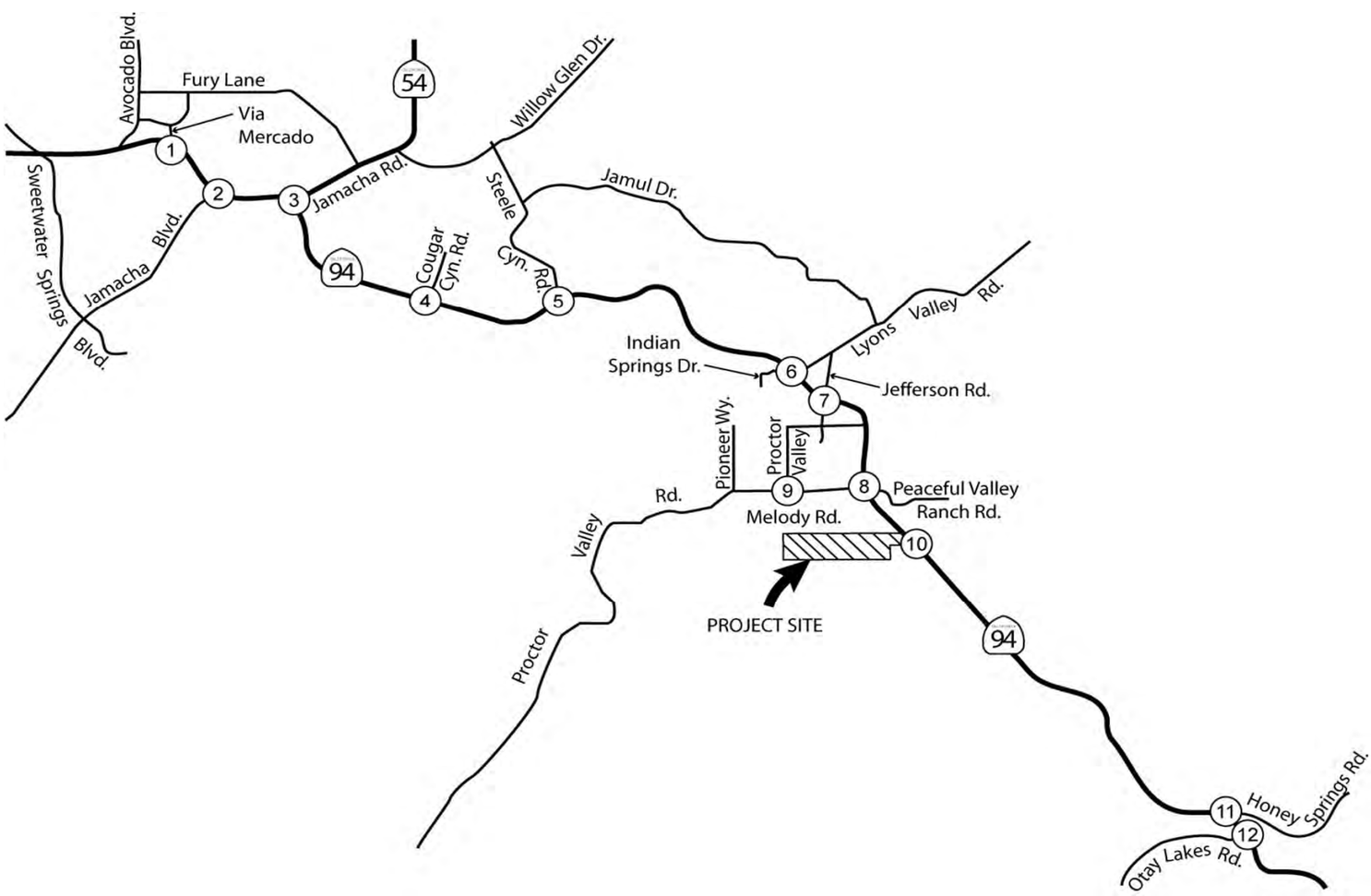
FIGURE 4-5.1

Proposed Project Assignment for Near Term (2015) Conditions -Study Int.(Weekday) (cont.)

K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]NT Proj Assign Fig13-24 weekday

Jamul Indian Village (Updated October 2012)

1 Via Mercado: ⇦ 423 / 423 SR 94 361 / 361 ⇨	**2** Jamacha Blvd.: ⇦ 423 / 423 ⇖ 38 / 38 SR 94 361 / 361 ⇨ ⇗ 32 / 32	**3** Dwy.: ⇗ 32 / 32 Jamacha Rd. SR 94 393 / 393 ⇙ SR 94 ⇖ ⇗ 461 / 461 38 / 38	**4** Cougar Canyon Rd.: ⇦ 499 / 499 SR 94 426 / 426 ⇨
5 45 / 45 ⇙ Steele Canyon Rd. ⇗ 53 / 53 ⇦ 499 / 499 SR 94 426 / 426 ⇨	**6** 6 / 6 ⇙ Lyons Valley Rd. ⇗ 8 / 8 ⇦ 552 / 552 SR 94 471 / 471 ⇨ Indian Springs Dr.	**7** 39 / 39 ⇙ Jefferson Rd. ⇗ 45 / 45 ⇦ 559 / 559 SR 94 477 / 477 ⇨ Proctor Valley Rd.	**8** 516 / 516 ⇩ SR 94 Melody Rd. Peacefull Valley Ranch Rd. 13 / 13 ⇙ ⇖ ⇧ 15 / 15 605 / 605
9 Proctor Valley Rd. ⇦ 15 / 15 Melody Rd. 13 / 13 ⇨	**10** 529 / 529 ⇗ SR 94 Reservation Rd. 620 / 620 ⇗ 136 / 136 ⇙ ⇗ 116 / 116	**11** 128 / 128 ⇩ 8 / 8 ⇙ SR 94 ⇗ 6 / 6 Honey Springs Rd. ⇧ 110 / 110	**12** 121 / 121 ⇗ 8 / 8 ⇩ SR 94 Otay Lakes Rd. 103 / 103 ⇗ ⇧ 6 / 6



Legend

X / Y = FRIDAY / SATURDAY
PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

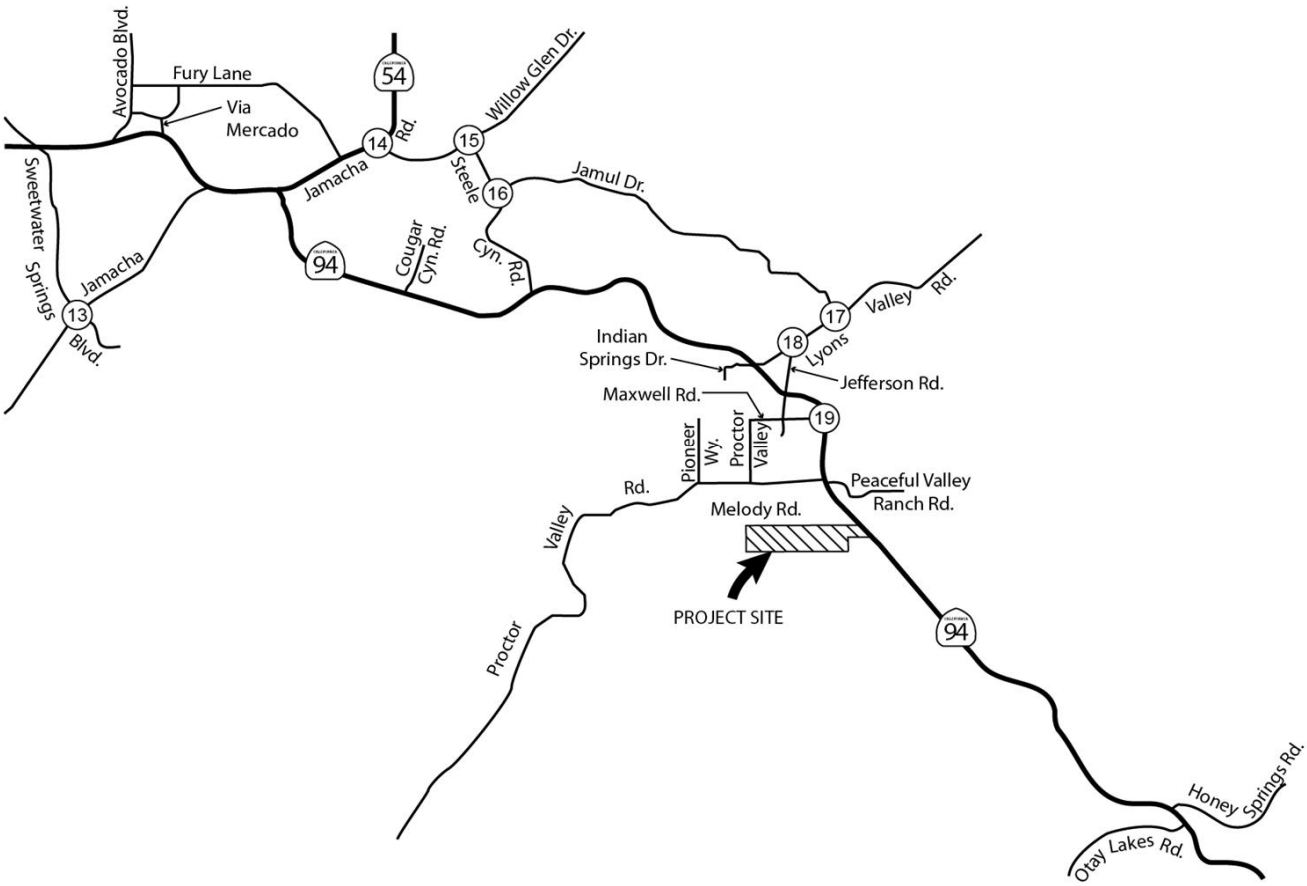
FIGURE 4-6

Proposed Project Assignment for Near Term (2015) Conditions -Study Int.(Friday/Saturday)

K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]NT Proj Assign Fig1-12 weekend

Jamul Indian Village (Updated October 2012)

13	8 / 8 30 / 30 Jamacha Blvd.	Sweetwater Springs Blvd.	14	Willow Glen Dr.	26 / 26 32 / 32 Jamacha Rd.	15	Steele Canyon Rd.	19 / 19 Willow Glen Dr.	16	45 / 45 19 / 19 Steele Canyon Rd.	23 / 23 Jamul Dr.
6 / 6	26 / 26		30 / 30 13 / 13	15 / 15 38 / 38		45 / 45	53 / 53 23 / 23			53 / 53	
17	19 / 19 Jamul Dr.	26 / 26 Lyons Valley Rd.	18	6 / 6 39 / 39 Lyons Valley Rd.		19	516 / 516 SR 94 Maxfield Rd.				
23 / 23 30 / 30			8 / 8 Jefferson Rd.	45 / 45			605 / 605				



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

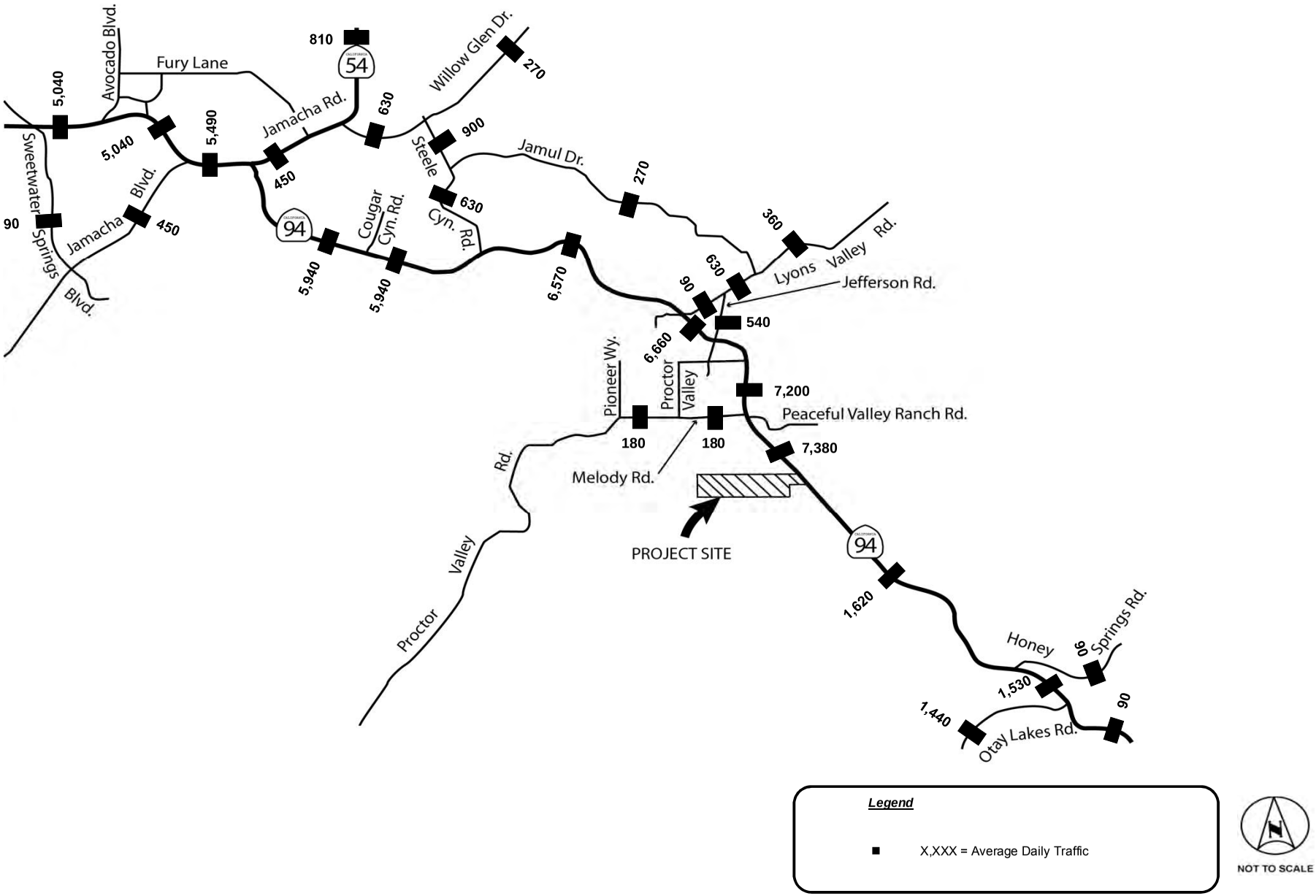
NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 4-6.1

Proposed Project Assignment for Near Term (2015) Conditions -Study Int.(Friday/Saturday) (cont.)

K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]NT Proj Assign Fig13-24 weekend



Kimley-Horn and Associates, Inc.

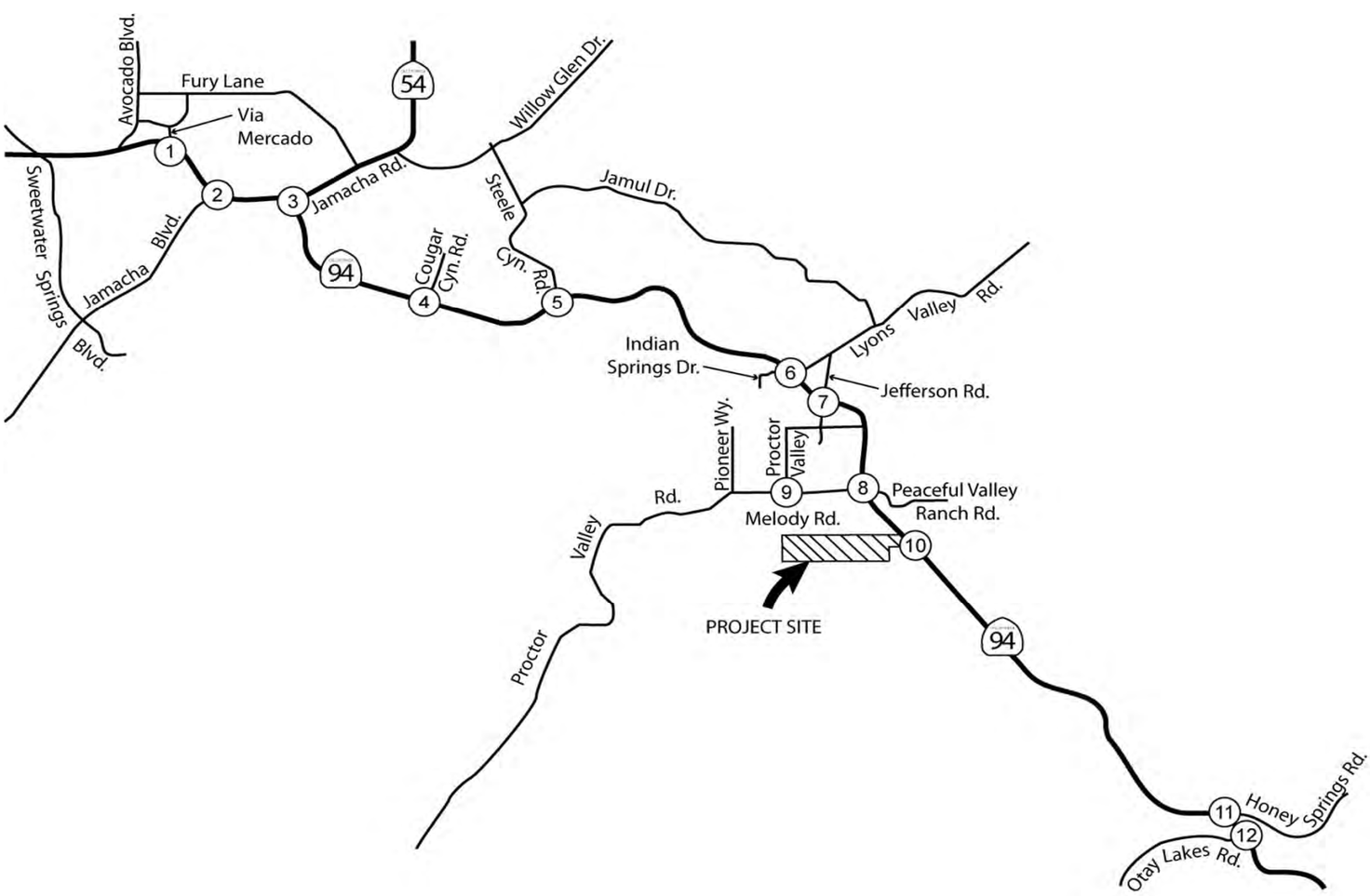
FIGURE 4-7

Proposed Project Assignment for Near Term (2015) Conditions -Roadway Segments

K:\SND_TPTO\095848000\Excel\[848000RS01.xlsm]ADT Fig\Proposed Project Assignment for Near Term (2015) Conditions -Roadway Segments

Jamul Indian Village (Updated October 2012)

1 Via Mercado ⇦ 75 / 198 SR 94 176 / 224 ⇨	**2** Jamacha Blvd. ⇦ 75 / 198 ⇖ 9 / 24 SR 94 176 / 224 ⇨ ⇗ 21 / 27	**3** SR 94 Dwy. ⇖ 21 / 27 Jamacha Rd. 197 / 251 ⇙ SR 94 ⇗ 84 / 222 ⇗ 9 / 24	**4** Cougar Canyon Rd. ⇦ 93 / 245 SR 94 218 / 277 ⇨
5 ⇙ 29 / 37 Steele Canyon Rd. ⇗ 13 / 33 ⇦ 93 / 245 SR 94 218 / 277 ⇨	**6** ⇙ 4 / 5 Lyons Valley Rd. ⇗ 2 / 5 ⇦ 106 / 278 SR 94 248 / 314 ⇨ Indian Springs Dr.	**7** ⇙ 25 / 32 Jefferson Rd. ⇗ 11 / 28 ⇦ 107 / 283 SR 94 252 / 320 ⇨ Proctor Valley Rd.	**8** ⇩ 277 / 352 SR 94 Melody Rd. ⇙ 4 / 5 Peacefull Valley Ranch Rd. 50 / 64 ⇙ ⇗ 21 / 57 ⇧ 118 / 311 ⇗ 2 / 5
9 Proctor Valley Rd. ⇦ 21 / 57 Melody Rd. 50 / 64 ⇨	**10** ⇗ 332 / 421 SR 94 Reservation Rd. 141 / 373 ⇗ 38 / 99 ⇙ ⇗ 88 / 112	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes Road and the intersection of SR-94	**12** ⇙ 34 / 90 ⇩ 2 / 5 ⇘ 2 / 5 SR 94 Otay Lakes Rd. Honey Springs Rd. 80 / 101 ⇗ ⇧ 4 / 5



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

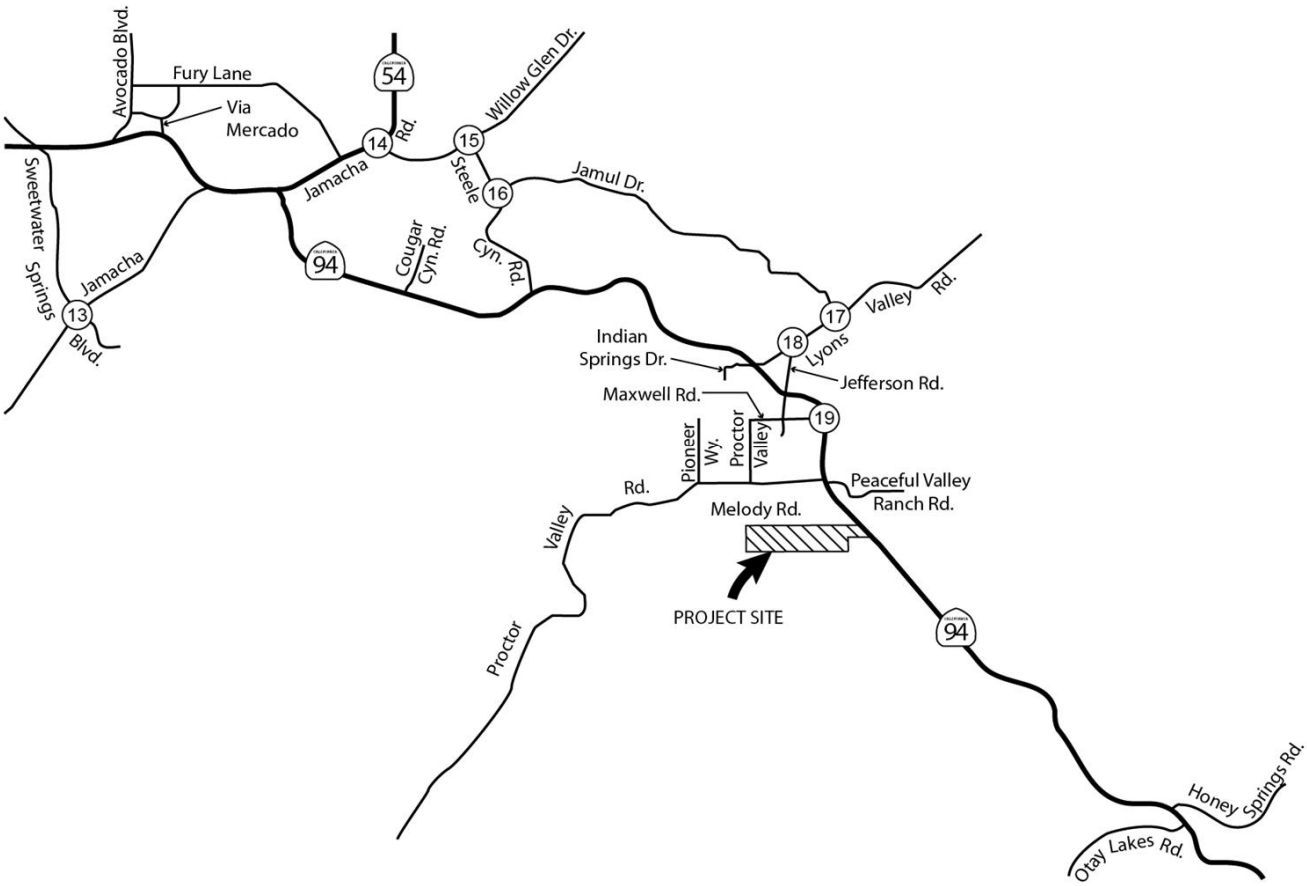
FIGURE 4-8

Proposed Project Assignment for Horizon Year (2035) Conditions -Study Int. (Weekday)

K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]BO Proj Assign Fig1-12 weekday

Jamul Indian Village (Updated October 2012)

13	2 / 5 7 / 19 Jamacha Blvd.	Sweetwater Springs Blvd.	14	Willow Glen Dr.	17 / 21 21 / 27 Jamacha Rd.	15	Steele Canyon Rd.	13 / 16 Willow Glen Dr.	16	29 / 37 13 / 16 Steele Canyon Rd.	5 / 14 Jamul Dr.
4 / 5	17 / 21		7 / 19 8 / 11	4 / 9 9 / 24		29 / 37	13 / 33 5 / 14			13 / 33	
17	13 / 16 Jamul Dr.	17 / 21 Lyons Valley Rd.	18	4 / 5 25 / 32 Lyons Valley Rd.		19	277 / 352 SR 94 Maxfield Rd.				
5 / 14 7 / 19			2 / 5 Jefferson Rd.	11 / 28			118 / 311				



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

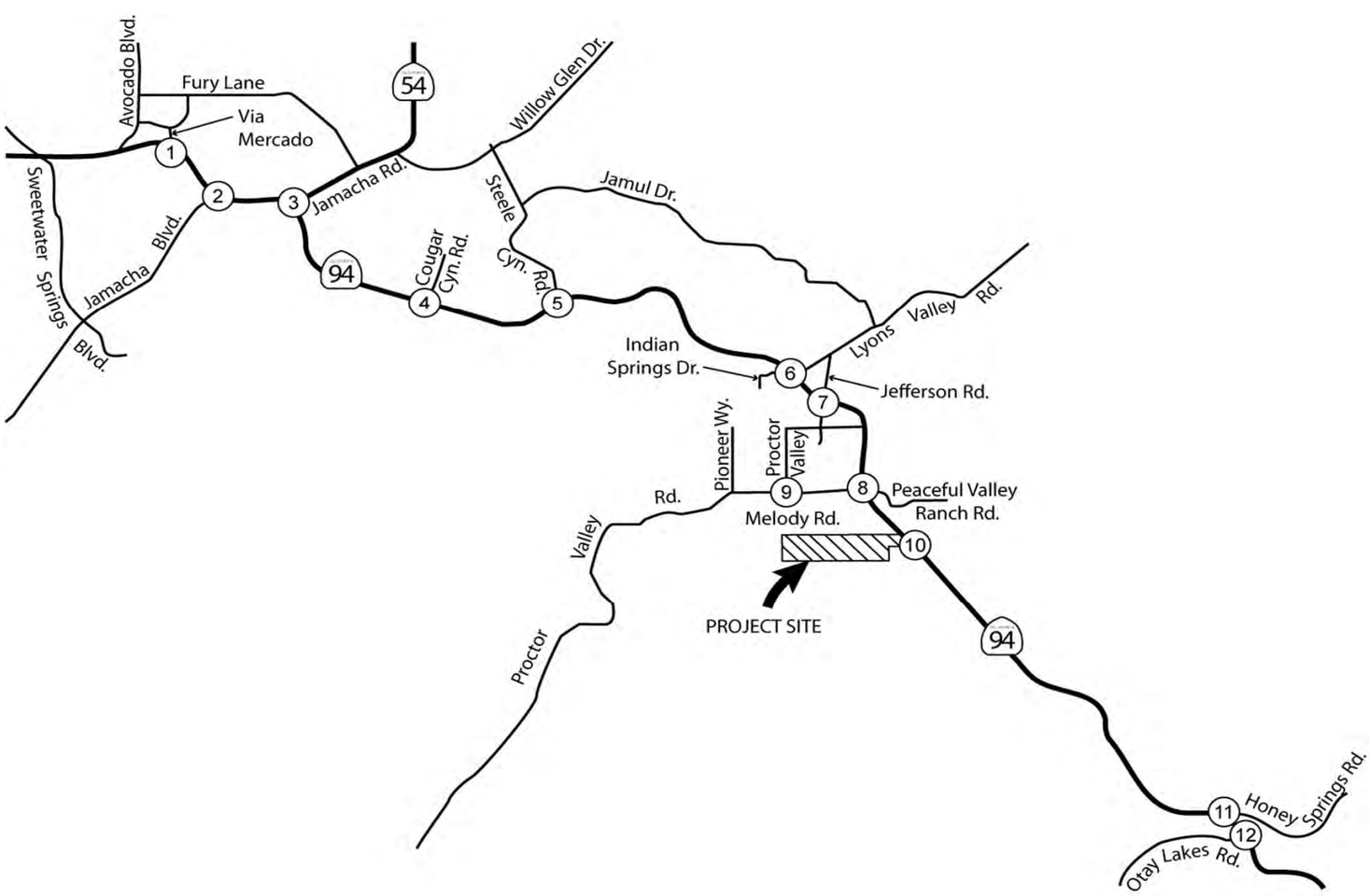
FIGURE 4-8.1

Proposed Project Assignment for Horizon Year (2035) Conditions -Study Int. (Weekday) (cont.)

K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]BO Proj Assign Fig13-24 weekday

Jamul Indian Village (Updated October 2012)

1 Via Mercado ⇦ 317 / 317 SR 94 271 / 271 ⇨	**2** Jamacha Blvd. ⇦ 317 / 317 ⇖ 38 / 38 SR 94 271 / 271 ⇨ ⇗ 32 / 32	**3** SR 94 Dwy. ⇖ 32 / 32 Jamacha Rd. 303 / 303 ⇙ SR 94 ⇗ ⇗ 355 / 355 38 / 38	**4** Cougar Canyon Rd. ⇦ 393 / 393 SR 94 335 / 335 ⇨
5 45 / 45 ⇙ Steele Canyon Rd. ⇗ 53 / 53 ⇦ 393 / 393 SR 94 335 / 335 ⇨	**6** 6 / 6 ⇙ Lyons Valley Rd. ⇗ 8 / 8 ⇦ 446 / 446 SR 94 381 / 381 ⇨ Indian Springs Dr.	**7** 39 / 39 ⇙ Jefferson Rd. ⇗ 45 / 45 ⇦ 453 / 453 SR 94 387 / 387 ⇨ Proctor Valley Rd.	**8** 426 / 426 ⇩ Melody Rd. SR 94 ⇖ 6 / 6 Peacefull Valley Ranch Rd. 77 / 77 ⇙ ⇖ ⇧ ⇗ 91 / 91 499 / 499 8 / 8
9 Proctor Valley Rd. ⇦ 91 / 91 Melody Rd. 77 / 77 ⇨	**10** 510 / 510 ⇙ Reservation Rd. SR 94 597 / 597 ⇗ 159 / 159 ⇙ ⇗ 135 / 135	As part of the County of San Diego's General Plan, the intersection of Honey Springs Road will be realigned to form a four-way intersection with Otay Lakes Road and the intersection of SR-94	**12** 144 / 144 8 / 8 8 / 8 ⇙ ⇩ ⇘ Otay Lakes Rd. SR 94 Honey Springs Rd. 123 / 123 ⇗ ⇧ 6 / 6



Legend

X / Y = FRIDAY / SATURDAY
PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 4-9

Proposed Project Assignment for Horizon Year (2035) Conditions -Study Int. (Friday/Saturday)

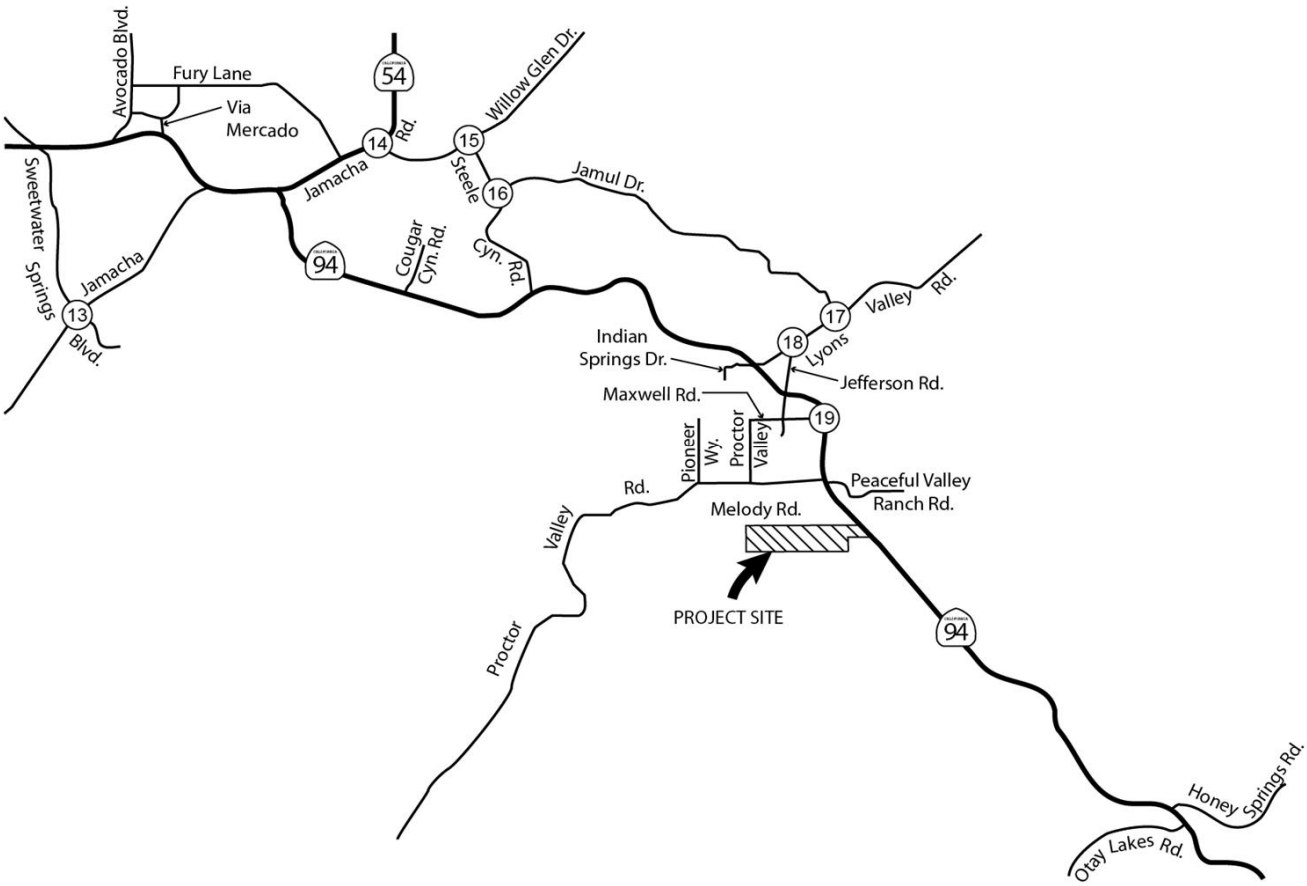
K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]BO Proj Assign Fig1-12 weekend

Jamul Indian Village (Updated October 2012)

13	8 / 8 30 / 30 **Jamacha Blvd.**	**Sweetwater Springs Blvd.**	**14**	**Willow Glen Dr.**	26 / 26 32 / 32 **Jamacha Rd.**	**15**	**Steele Canyon Rd.**
6 / 6	26 / 26		30 / 30 13 / 13	15 / 15	38 / 38	45 / 45	53 / 53

Willow Glen Dr.	19 / 19 **Willow Glen Dr.**	**16**	45 / 45 19 / 19 **Steele Canyon Rd.**	23 / 23 **Jamul Dr.**			
23 / 23	53 / 53			53 / 53			

17	19 / 19 **Jamul Dr.**	26 / 26 **Lyons Valley Rd.**	**18**	6 / 6 39 / 39 **Lyons Valley Rd.**	**19**	426 / 426 **SR 94** **Maxfield Rd.**	
23 / 23 30 / 30			8 / 8 **Jefferson Rd.**	45 / 45			499 / 499



Legend

X / Y = AM / PM PEAK HOUR TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 4-9.1

Proposed Project Assignment for Horizon Year (2035) Conditions -Study Int. (Friday/Saturday) (cont.)

K:\SND_TPTO\095848000\Excel\[848000TA01_2000.xlsm]BO Proj Assign Fig13-24 weekend